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SOVIET AND EAST EUROPEAN GENERAL PURPOSE FORCES

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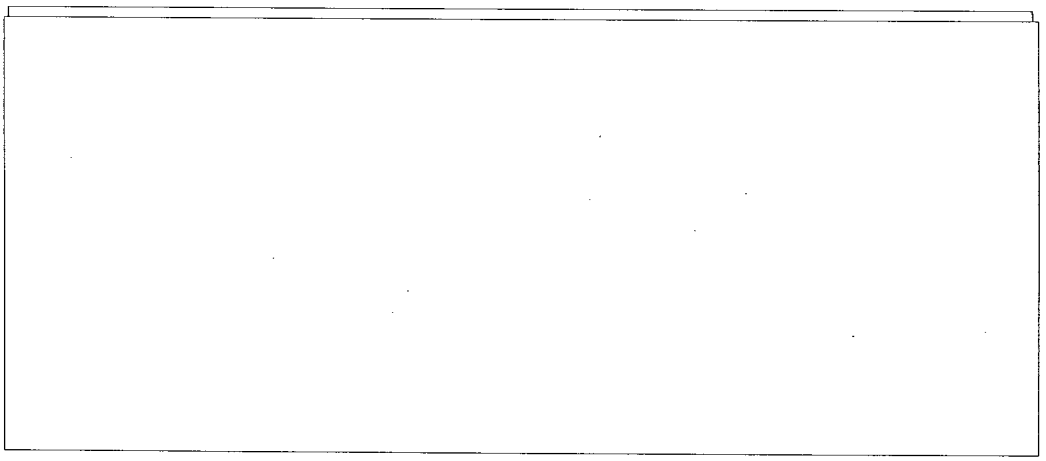

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Soviet and East European General Purpose Forces

Summary

In the past two years the Soviet general purpose forces have been undergoing the first major changes since 1960. These changes are increasing the size of the forces, altering their dispositions, and extending the range and variety of their traditional missions.

The Czechoslovak crisis and the ensuing intervention will probably cause profound changes in Warsaw Pact military relations and policy. At least temporarily, the alignment of Warsaw Pact forces opposite the NATO central region has been altered and the available force for offensive use against NATO reduced.

Although the lasting results of these changes are not clear, it is likely that the Soviets will place less reliance on allied forces over the long run. Soviet general purpose forces will probably assume a larger share of responsibility for initial combat operations against NATO, with a consequent diminution of the major roles heretofore assigned the Czech and Polish national forces. This will pose an increased requirement for combat-ready Soviet forces in Central Europe or the western USSR, or both.

Soviet ground and tactical air forces along the Sino-Soviet border and in Mongolia have doubled since 1965, and additional increases are evidently under way. The buildup appears designed to provide the Soviets with not only increased security but also a sizable offensive capability. These forces could be intended to influence the course of events in regions adjacent to Soviet borders if a breakdown of central control in Communist China should create an opportunity.

In areas outside the traditional NATO - Warsaw Pact arena, the Soviets have begun to seek ways of advancing their foreign policy objectives by displaying

their military power. Thus far, the main example of this trend is the extension of Soviet naval and air operations to the Mediterranean area. As the Soviets gain experience in naval operations and improve their naval capabilities, they can be expected to extend such activities to other areas.

The requirement for increased Soviet military strength in Europe comes unexpectedly on top of the substantial buildup currently under way against China, and it may impel the USSR to re-examine its priorities for the border program. In any case, we expect that--at least for the next few years--the general purpose forces will continue to grow.

Recent analysis has provided new insight into Warsaw Pact war planning, the combat readiness of Soviet and East European forces in peacetime, and the plans for mobilization in the event of war with NATO in the central region. Essentially the plans call for the Soviets and East Europeans to maintain sufficient combat-ready forces in the forward area to defend against a surprise attack. Large-scale offensive operations against NATO would require major reinforcements from the western USSR and Poland.

A large part of these potential reinforcements--particularly the service support elements--are manned and equipped at low levels in peacetime. The filling out of these forces, by mobilization of reservists and civilian vehicles, and their movement into the forward area could probably be accomplished in two to three weeks.

I. The Soviet Problem

The contingency of war with NATO in the central region of Europe dominates all other considerations in Soviet theater forces doctrine and planning. The size and composition of the main elements of the theater forces reflect this Soviet preoccupation with NATO in Europe.

Other Warsaw Pact countries have contributed substantially to the force the Soviets deem necessary to oppose NATO. The current difficulties with Czechoslovakia almost certainly will lead the Soviets to consider such contributions as mixed blessings and probably to rely less on the Warsaw Pact and more on their own forces.

With the Chinese, the Soviets are faced with a hostile and potentially dangerous neighbor. In spite of a common Communist heritage, both nations seem to be pursuing the mutually conflicting national objectives of past eras. The current Soviet reinforcement along the Chinese border indicates a concern for the possible anti-Russian directions the agony of the Cultural Revolution might take.

The already substantial requirements for augmentation of the general purpose forces which have developed from the Sino-Soviet conflict will now probably be increased by the desire to have stronger Soviet forces to fill the gap in Warsaw Pact defenses left by the effect of the intervention on the Czechs. These greater requirements, in combination with accelerating costs for new, more complex land armaments, coincide with rising demands for strategic forces outlays.

Differing Soviet concepts on the use of military power for political purposes have important implications for the future structure of the theater forces. Strategic power versus usable power is currently the central, divisive issue. Divergent viewpoints on this issue have been reflected in recent statements and articles by senior military leaders. There are indications of an intramilitary debate over whether to pursue further improvement of strategic capabilities or to broaden the capabilities of the conventional forces.

Theater force advocates have become increasingly vocal over the past year and have argued for a strategy of flexible response, including implicitly, a nonnuclear alternative for a war in Europe. In addition, proponents of flexible response now hold important command and staff positions in the military hierarchy.

For example, Col. Gen. M. Povaliy, planning chief of the Soviet General Staff, in a March 1968 Red Star article gave an unprecedented endorsement to the rationale underlying the US strategy of flexible response. Under the concept of flexible response, wrote Povaliy, a state need not run the risk of nuclear war in every situation involving its allies and can pursue its own military-political objectives with the least threat to its security.

II. Policy and Plans

A. The Warsaw Pact Mission

In the eyes of the Soviets, the overriding mission of the general purpose forces is security in Central Europe. Significant new bodies of evidence are now available which give a clear image of the main features of their plan for the contingency of a war in this region, and the manner in which they intend to employ the main Warsaw Pact forces.

In general terms, the plan (see Figure 1, foldout map following this page) envisions a broad rapid advance through West Germany and on to the English Channel by a force of five Fronts in two echelons.* The primary offensive missions are evidently the responsibility of the Warsaw Pact forces (the first echelon) presently deployed in East Germany, Czechoslovakia, and Poland. Two Fronts (the second echelon) from the western USSR are apparently intended mainly for the final isolation of Western Europe from reinforcement.

The recent crisis with Czechoslovakia will probably have no appreciable effect on the essential aspects of the main Warsaw Pact plan. Nonetheless, significant shifts in force composition may occur in order to make Soviet troops responsible for fulfilling missions formerly entrusted to Polish and Czechoslovakian forces.

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* *The term "echelon" has special meaning in the Soviet view of military operations. Soviet doctrine envisages large groupings of troops deployed behind the front-line or first-echelon units and not engaged in combat with the enemy. This second echelon would be committed only after the first-echelon forces have been substantially engaged by the enemy. In some sense the second echelon is a reserve, but it is a maneuvering force, often with predetermined objectives. The Soviet concept of echelons is applicable at all levels, including army, Front, and even the theater level.*

Under the present plan, a Polish Front is to make a thrust along the seaward flank, a force composed of both Soviet (GSFG) and East German forces in East Germany is assigned the Front role in the central sector, and forces from Czechoslovakia would constitute a Front on the southern flank. the second echelon in the Czech sector is a Soviet Front from the Carpathian region of the Ukraine. The Soviet forces in Belorussia and perhaps the 11th Guards Army in the Baltic Military District appear to be designed to perform as a second-echelon Front behind the GSFG or Polish Fronts.

The Front from Czechoslovakia has the mission of advancing as far as the west bank of the Rhine in the area roughly between Mannheim and the Swiss border. this Front, as designed for the mission, is composed of three combined-arms armies, one tactical air army, and assorted Front combat and service support units.

The Polish Front, of the same general composition but larger in size, probably has an offensive zone of responsibility about one hundred miles wide extending as far west as the English Channel at Ostende.

The Soviet and East German Front--comprising as many as four combined arms and two tank armies, a massive air army, and other combat and service support units--has the responsibility of destroying the main body of NATO forces in the center.

The two Fronts from the western USSR are apparently intended for commitment after the NATO forces have been significantly weakened by the attacks of the first-echelon Fronts. Evidence, suggests that with these fresh forces rests the responsibility for the final offensive to the channel coast. The most critical aspect of this plan to the Soviets is the need to isolate the European theater in an extremely short period of time--perhaps less than three weeks.

The Warsaw Pact contingency plan for the central region of Europe clearly posits a rapid achievement of numerical superiority in maneuver units, tanks, and artillery. However, with the exception of tanks, such superiority is not maintained in peacetime. The success of the plan would depend in large part on the rapid mobilization for most of the rear services support force and even for some of the combat force.

Highly reliable evidence outlines the major features of the plan for mobilizing Warsaw Pact forces against NATO in the central region. The extent of mobilization of a Front apparently is related to the expected timetable for its commitment to battle. As much as one-third of the Czech and Polish Fronts is to be mobilized within three days. One-half to two-thirds of the Carpathian and Belorussian Fronts are apparently expected to be mobilizing at about the same time. Prior to the Czechoslovak invasion, only the Soviet forces in Germany were near full strength.

Evidently the Warsaw Pact countries, including the USSR, intend to begin deploying the ready portions of their Fronts from the interiors of their countries before the whole force is completely mobilized. The leading elements of the two Soviet Fronts from the western USSR, for example, are expected to arrive in central Poland and Czechoslovakia within three to six days. The Soviets anticipate that the main elements of these two Fronts would participate in combat operations within two weeks after mobilization is ordered.

B. Extension of Soviet Power

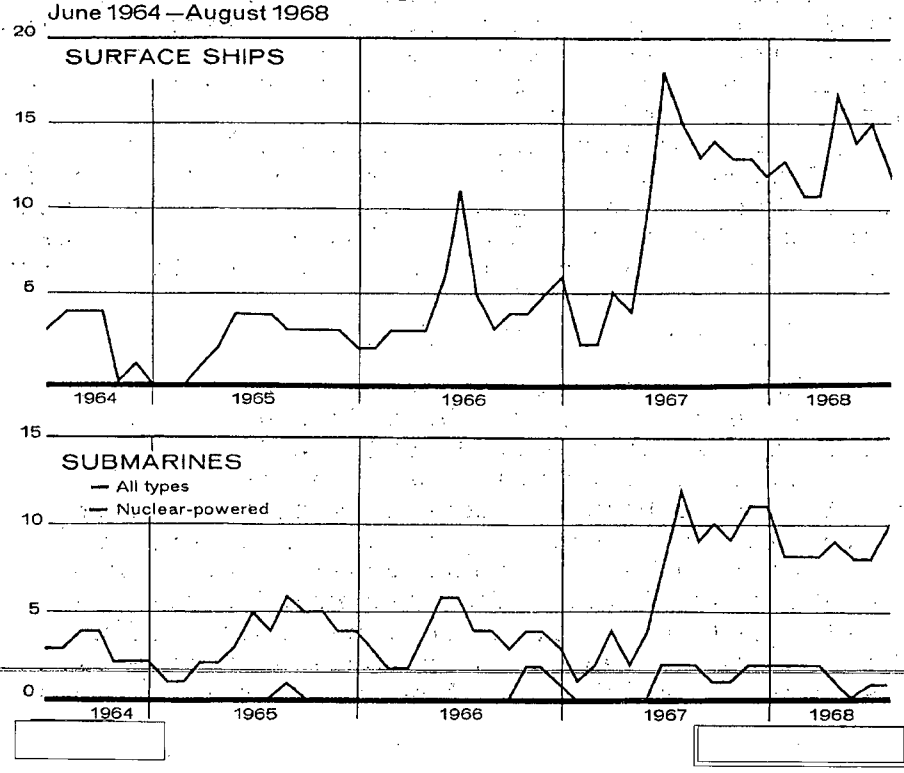
The Soviets have evidently concluded that the achievement of many of their foreign policy objectives in the "uncommitted world" will require a strong Soviet military presence. In the last few years, they have begun to move away from their previous tendency of avoiding potential military confrontations in areas not contiguous to the USSR or its neighboring allies. The year-round operation of naval squadrons in areas long the domain of the US and British navies is one example of this evolution in the Soviets' thinking on how to use their forces.

The commitment of Soviet naval and air forces on a continuing basis to the Mediterranean area foreshadows further such deployment elsewhere. However, the USSR's present naval capabilities place constraints on the potential number of such ventures. Generally speaking, the Soviets need a total of three combatant vessels for each one kept deployed, and therefore another undertaking the size of that in the Mediterranean would severely strain the Soviet Navy.

For the last 15 months the Soviets have maintained a force of about ten surface combatants in the Mediterranean, in addition to the militarily more significant submarine force (see Figure 2, below). Since March 1968, Soviet naval aviation has been operating a small TU-16 reconnaissance squadron based in the United Arab Republic. It is the first Soviet naval air deployment abroad and further reflects the new Soviet willingness to use military power away from the security of the homeland.

Figure 2

USSR: Combatant Strength of Mediterranean Squadron
June 1964—August 1968



In addition to the Mediterranean involvement, the Soviets have exhibited some interest in the Indian Ocean area. At present, without the Suez Canal or local bases, an extended operation in this area would probably draw too heavily on Soviet naval resources to be attractive. Should the base and transit problems be solved, the Soviets could deploy another, smaller Mediterranean-type squadron.

C. The Soviet Buildup Against China

The Soviet buildup along the Chinese border and in Mongolia has been the major development affecting ground forces strength and dispositions for the past several years. The buildup is apparently not in response to any immediate Chinese threat but is probably intended to meet contingencies arising from current Chinese instability as well as the possible future development of a Chinese military threat. The buildup is incomplete and at least another year of large-scale construction and a substantial increase in personnel and equipment strengths will be required to complete the deployments already under way.

The increased requirements for Soviet ground forces strength in the West, which are likely to follow from the Czechoslovak crisis, may force the Soviets to re-examine, and perhaps lower, the priorities assigned to the China border buildup.

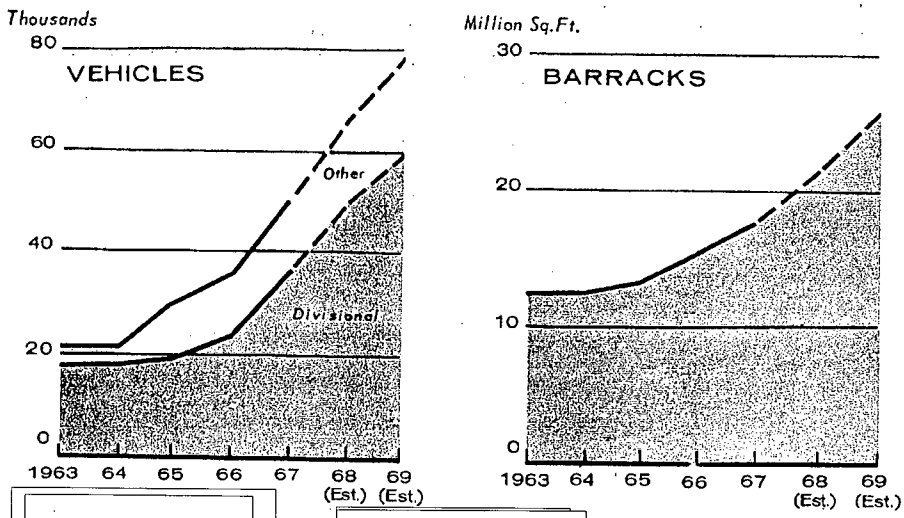
III. The Buildup Against China

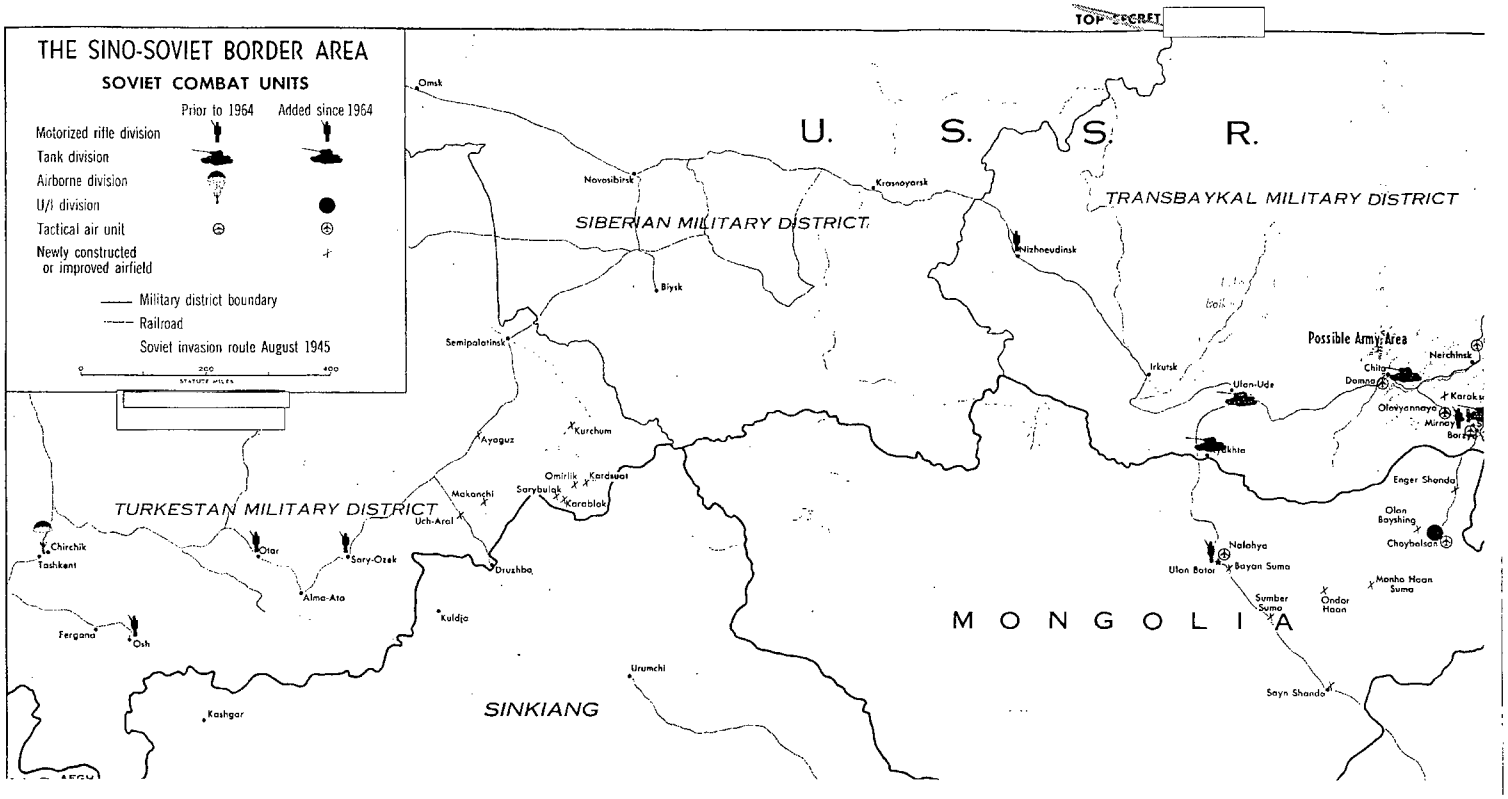
The Soviets have doubled the size of their forces along the border opposite China--from Sinkiang to Manchuria--during the past several years. The number of line divisions has increased from 13 to 24 and combat and service support elements have been added. Some small increases occurred at least as early as 1964, but the major increases began in 1966. (See Figure 3, the foldout map following this page, and Figure 4, below.)

Tactical aviation along the border has also increased substantially, and a new tactical air force is being established in the Transbaykal area and in Mongolia. The current tactical air dispositions include some 130 aircraft in the Transbaykal Military District (MD), 190 in the Far East MD, and about 80 aircraft in Mongolia. Continuing airfield construction in the Transbaykal indicates that from two to three additional regiments may be added soon to form a tactical air army. The Turkestan MD has about 190 aircraft, mostly located opposite Iran and Afghanistan. However, the Soviets have recently constructed new airfields opposite Sinkiang to which aircraft could be deployed.

Figure 4

Ground Forces Buildup on Sino-Soviet Border




TOP SECRET
THE SINO-SOVIET BORDER AREA
SOVIET COMBAT UNITS
Prior to 1964
Added since 1964
Motorized rifle division
Tank division
Airborne division
U/I division
Tactical air unit
Newly constructed or improved airfield
Military district boundary
Railroad
Soviet invasion route August 1945
0
200
400
STATUTE MILES
U. S. S. R.
TRANSBAYKAL MILITARY DISTRICT
SIBERIAN MILITARY DISTRICT
TURKESTAN MILITARY DISTRICT
MONGOLIA
SINKIANG
Possible Army Area
Omsk
Novosibirsk
Krasnoyarsk
Nizhneudinsk
Biysk
Semipalatinsk
Irkutsk
Ulan-Ude
Nerchinsk
Chita
Dauria
Karaku
Olovyannaya
Mirnaya
Borzya
Sukhbaatar
Ayaguz
Kurchum
Omirlik
Kardasai
Sarybulak
Karablak
Makanchi
Uch-Aral
Chirchik
Tashkent
Otar
Sary-Ozek
Alma-Ata
Druzhba
Kuldja
Fergana
Osh
Kashgar
Urumchi
Enger Shanda
Olan Bayshing
Choybalsan
Nalaihya
Ulan Bator
Bayan Suma
Sumber Suma
Ondor Haan
Monha Haan Suma
Sayn Shando


Tank division
Airborne division
U/I division
Tactical air unit
Newly constructed or improved airfield
Military district boundary
Railroad
Soviet invasion route August 1945
0
200
400
STATUTE MILES
SIBERIAN MILITARY DISTRICT
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Novosibirsk
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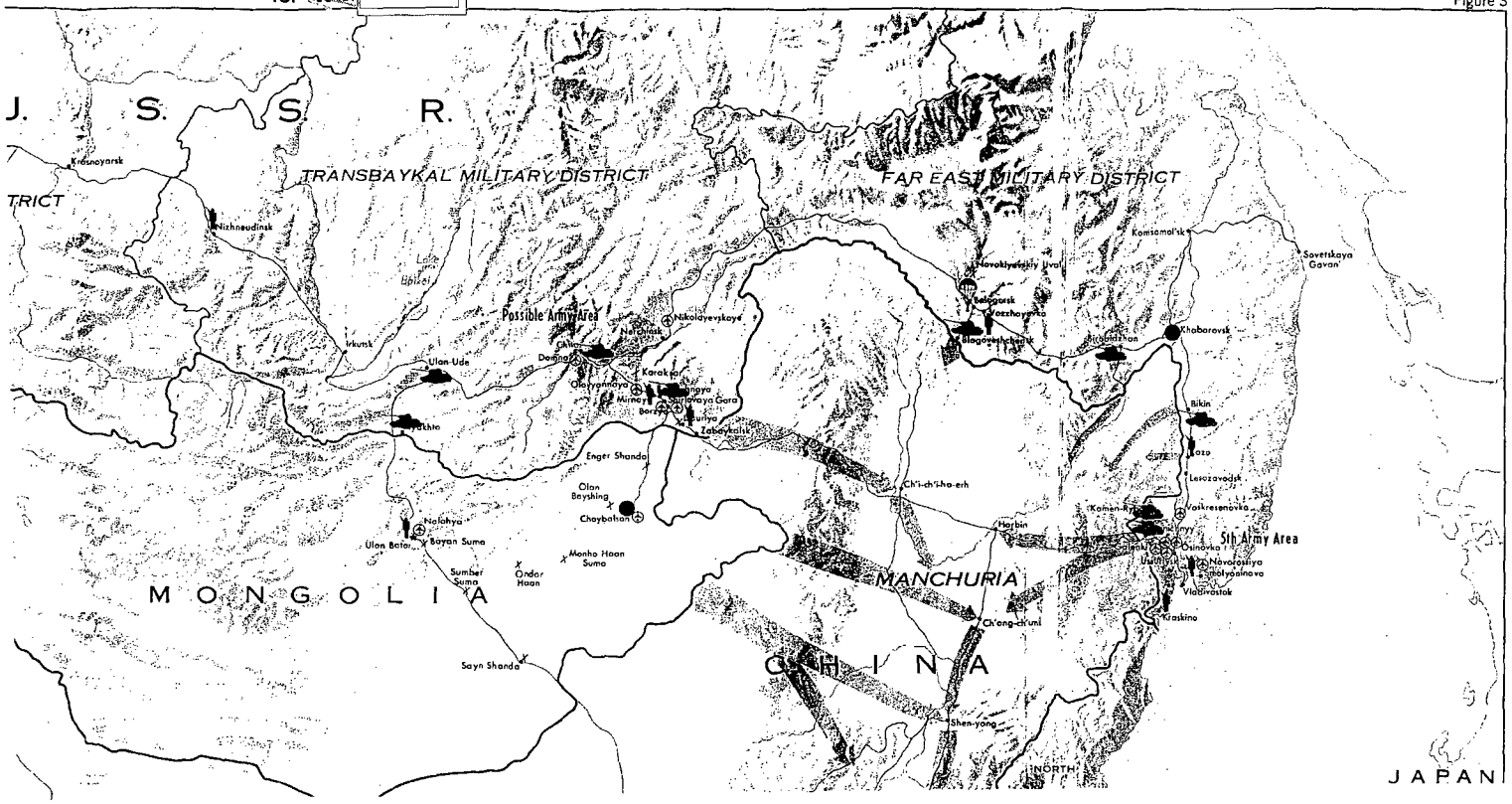
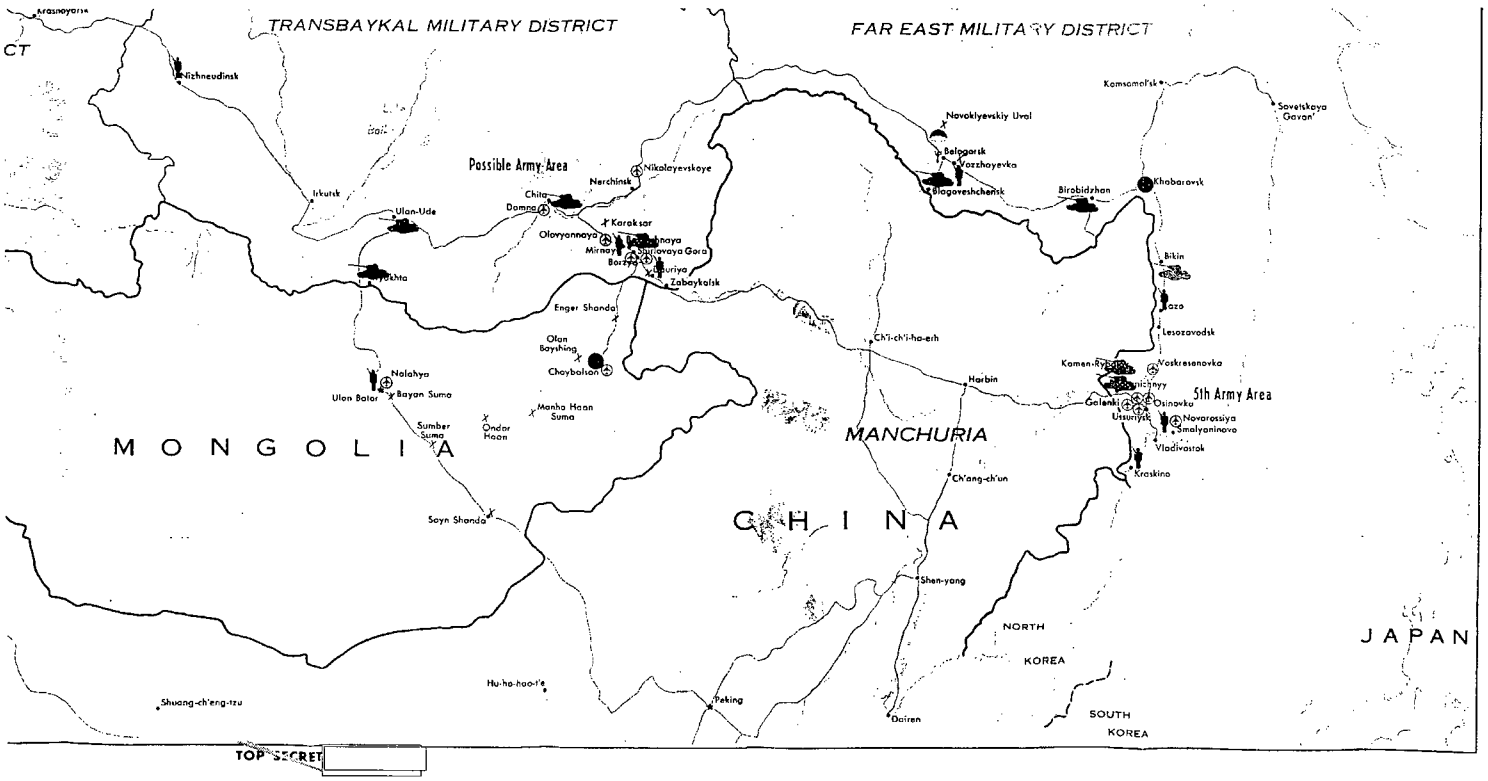
Biysk
Semipalatinsk
Irkutsk
Ulan-Ude
Chita
Dorinda
Karakan
Ayagoz
Kurchum
Lake Balkhash
Omirlik
Kordsuat
Sorybulak
Karoblak
Makanchi
Uch-Aral
Chirchik
Tashkent
Otar
Sary-Ozek
Oruzhba
Alma-Ata
Kuldja
Fergana
Osh
Urumchi
Kashgar
SINKIANG
AFGH.
PAKISTAN
C H I N A
Lop Nor
Shuang-ch'eng-tzu
Hu-ho-hao-t'e
M O N G O L I A
Enger Shanda
Olan Bayshing
Choybalsan
Nalaikha
Ulan Bator
Bayan Suma
Sumber Suma
Ondor Haan
Manha Haan Suma
Sayn Shanda
TOP SECRET

TOP SECRET

Figure 3




TRANSBAYKAL MILITARY DISTRICT
FAR EAST MILITARY DISTRICT
Possible Army Area
5th Army Area
MONGOLIA
MANCHURIA
CHINA
JAPAN
NORTH KOREA
SOUTH KOREA
Nizhneudinsk
Irkutsk
Ulan-Ude
Chita
Nerchinsk
Nikolayevskoye
Karaksar
Olovyannaya
Mirnaya
Borzya
Zabaykalsk
Yakhta
Enger Shanda
Olan Bayshing
Choybolsan
Nalahya
Ulan Bator
Bayan Suma
Sumber Suma
Ondor Haan
Manha Haan Suma
Soyn Shanda
Ch'i-ch'i-ha-erh
Harbin
Ch'ang-ch'un
Shen-yang
Peking
Dairen
Hu-ha-hao-t'e
Shuang-ch'eng-tzu
Novokiyevskiy Uval
Belogorsk
Vozzhayevka
Blagoveshchensk
Birobidzhan
Komsomol'sk
Sovetskaya Gavan'
Khabarovsk
Bikin
Lazo
Lesozavodsk
Voskresenovka
Gelenki
Ussuriysk
Dalnerechnyy
Dalnovka
Novorossiya
Smolyaninovo
Vladivostok
Kraskino

TOP SECRET

About six divisions on the Chinese border--all of them in the Far East MD--have probably achieved combat readiness so far. If the present rate of increase in equipment and personnel continues, all of the 24 divisions now in the border area could be combat ready by late 1969. The Soviet plan for forces along the border probably encompasses more than 24 divisions. A buildup of at least four additional new divisions appears to be taking place in the border region.

Although part of the increase is probably aimed at strengthening Soviet border security along the vulnerable Trans-Siberian Railway, the Soviets are also creating two groupings of forces with significant offensive operational capabilities: one in the 5th Army area in the southern Maritime Territory and the other in the region east of Lake Baikal. It was from these areas that the Soviets made their most successful advances against the Japanese Army in 1945 (see foldout map, Figure 3). They are the most suitable regions for launching military operations into northeast China.

It is unlikely that the Soviets are preparing for any large-scale invasion of China, but the development of these two groupings may signal an intention to be prepared to act decisively to influence events in Asiatic regions contiguous to the USSR. In the event of a complete breakdown of central control in China, for example, the Soviets would have forces readily available which could intervene in support of any pro-Soviet political elements that might exist in border regions. These forces also provide insurance against future acts by China which the Soviets might view as threatening.

Thus far the buildup has been achieved without any apparent reduction of the Soviet forces facing NATO, although it has probably caused some slowdown in the program to supply those forces with more modern equipment. It probably has caused an increase in the personnel strength of the general purpose forces of the Soviet Union. By late 1969, if no offsetting reductions are made in other areas, the buildup will probably have increased personnel strength along the border to a total of about 300,000.

IV. Capabilities

A. Ground Forces

1. General

The doctrine which emerged from a debate published in the classified journal Military Thought in the early 1960's had as its central theme the conviction that a war with NATO in Europe would either begin with, or quickly escalate to, the use of nuclear weapons. Nuclear warfare would not, however, avert the need for large ground forces. These would be required not only to sustain the expected high casualty rates but also to exploit the nuclear strikes by eliminating substantial surviving NATO forces and consolidating the conquest of Europe.

The forces requirement was complicated by the great distance between the probable area of initial conflict, i.e., Germany, and the western USSR where the bulk of the units intended for the European theater of operations were located. This complication, and the doubts that these reinforcements could ever reach the conflict area after hostilities had begun, helped incline Soviet military thought toward the idea that at least a "short period of tension" would precede the outbreak of hostilities. Soviet writings expressed a hope that this period of tension (which even achieved a certain dogmatic aura by being officially designated as the "special period") would allow time for covert mobilization and the movement westward of some reinforcements.

The current Warsaw Pact ground forces represent a compromise between the Soviet military planners' concepts of requirements for very large combat-ready forces, and economic and political constraints which made such large forces unacceptable. Faced with this situation the Soviets have sought a solution through the development of a capability for rapid mobilization and reinforcement. The concept is to maintain a large enough ready force in the forward area--East Germany, Poland, and Czechoslovakia --to defend against an unexpected attack and provide delay time while keeping a skeleton force which can be mobilized quickly in the western USSR.

The "short period of tension" is still, however, a vital ingredient in Soviet thinking. By implication, the Soviets--and their allies--have serious doubts as to whether they could successfully complete mobilization and deployment if hostilities should begin without warning.

2. Organization

a. Divisions

Soviet line divisions are small by US standards, but have about the same numbers of tanks as similar US divisions. The Soviet tank division, at about 8,000 men, has only half as many personnel as the US armored division. The Soviet motorized rifle division, at about 10,000, is only slightly more than half as large as the US mechanized division--its nearest counterpart. Both Soviet divisions have considerably less infantry and a much lower proportion of combat and service support and, although fully mobile, have only about half as many motor vehicles as do US divisions.

According to Soviet statements, in both classified and unclassified sources, these divisions have been designed for speed, firepower, and shock action in short-duration combat, with minimum organic service and support. These same statements indicate that the Soviets have attempted to optimize their divisions' organization for nuclear warfare. We believe that the tank units of these divisions would have the capability to launch a powerful initial assault. Their capability to sustain an offensive, however, would depend, in large part, on their ability to maintain their maneuver units at combat-effective strength, and on the provision of adequate combat and service support.

Current analysis indicates that the divisions' mobile stocks of POL and ammunition are sufficient for only about three days of intensive combat. After this period they would lose their combat effectiveness unless full-scale logistic support was initiated. Also the relatively small

Soviet combat units would be likely to lose their combat effectiveness rather quickly by attrition from personnel and equipment losses.

East European line divisions are generally patterned on the Soviet model although there are substantial variations in some countries. Czech and East German divisions are quite similar to Soviet divisions in structure. combat-ready Soviet and East German motorized rifle divisions have 10,000 men and 186 tanks, and that Soviet tank divisions have 8,000 men and 314 tanks while East German tank divisions have 8,760 men and 320 tanks. the Czech motorized rifle division at 10,000 men. Soviet divisions are quite similar to Czech divisions in strength and organization. the Czech tank division at more than 8,000 but less than 10,000 men.

A great many observations, confirm that the tank strengths reported above are valid. We believe that these figures approximate the planned wartime strengths, in personnel and tanks, for Soviet, East German, and Czech divisions. We believe that Polish divisions are slightly larger and that the current Polish mechanized division has about 10,800 men and 240 tanks and the Polish armored division about 8,800 men and 310 tanks.

The motorized rifle division has about 2,300 major items of equipment and the tank division about 2,200. Major equipment items include all self-propelled vehicles, except motorcycles, and large towed items such as artillery and two-axle trailers. Analysis of elements of other Soviet divisions in East Germany, supports

our belief that divisions are typical of Soviet divisions in East Germany and that their assessed equipment levels are correct.

Analysis of the divisions in the western USSR and along the China border reveals that eleven divisions in the western USSR and five in the Far East MD are probably equipped at about the same level as GSFG divisions. Their equipment levels and their apparent high levels of training activity, indicate that these divisions also are probably manned at sufficient strength to be available for immediate deployment.

b. Armies

The Soviet field army approximates a US corps in size and operational function. Soviet field armies have from three to five line divisions and additional combat and service support units. Armies are of two types: the tank army in which all or a majority of the divisions are tank divisions, and the combined-arms army in which all or a majority of the divisions are motorized rifle.

The field army also has administrative responsibilities and is provided with service support units sufficient to perform these functions at a minimal level while relying on the Front rear services for major logistical support of the tactical units. For example, the army mobile depots carry only one or two days of supplies for all of the army units. Depending on the numbers and types of divisions and support units assigned, the wartime strengths of Soviet field armies would probably range from as low as 35,000 to as high as 50,000 men.

Soviet classified writings consistently indicate that the divisions are intended to fight in armies rather than as independent forces. This same evidence indicates that the Soviets intend to commit their armies to combat essentially as they are organized in peacetime. Although there are no inherent constraints which would prevent eventual reorganization, the transition from

peace to war would be smoother and more efficient if changes in organization were minimized during that initial period.

The numbers and types of support units found in Soviet and East European armies vary. However, the typical army support would include a signal regiment, a Scud brigade of six to nine launchers, an artillery brigade of two to four battalions, an SA-2 regiment of 18 launchers (Soviet armies in Germany each have two SA-2 regiments), an engineer ponton bridge and assault crossing unit, and a few service units to provide a minimal level of transportation, maintenance, and supply support. Some armies also have a heavy tank unit equipped with 50 to 100 heavy tanks and assault guns.

Several of the armies in the western USSR may also have a large antiaircraft artillery unit in cadre status. At least three armies have 100 or more medium antiaircraft guns, and some associated equipment, stored near army headquarters in tactical troop installations. These weapons may indicate large AAA units in cadre status exist in some armies. However, these units probably could not be prepared for early commitment, but they may be intended for activation and deployment in a later stage of protracted emergency or war.

East European field armies also contain from three to five divisions and combat and service support at levels similar to Soviet armies. However, the East Europeans do not have tank armies. Rather, their armies tend to be made up of roughly equal proportions of tank and motorized rifle (or mechanized) divisions. East European field army headquarters do not exist as separate entities in peacetime but are formed during mobilization by designated personnel from the territorial military district commands. This procedure for organizing field army commands is regularly practiced in exercises.

c. Fronts

The Front is the highest Soviet wartime field headquarters for the joint operational

control of general purpose forces. A Front would consist of about three field armies and a tactical air army plus combat and service support. The rear services of the Front are responsible for most of the administrative support of the combat units including supply, evacuation, medical service, construction, and maintenance. The very low provision of these kinds of support at division and army level makes the efficient operation of the Front's rear services from the very beginning of military operations a critical requirement, since the combined total of mobile stocks of POL and ammunition in divisions and field armies would be sufficient for only four to five days of intensive combat.

Short-range tactical airborne support is provided by medium and heavy helicopters assigned to the tactical air components of a Front. The overall strength and disposition of the helicopter forces, however, are not adequate for the lift of large ground units.

The Group of Soviet Forces in Germany (GSFG) is virtually a Front in being. As such, it is the only completely mobilized Warsaw Pact Front. Several potential Fronts planned for Central Europe are known to exist. Prior to the Czechoslovak invasion the Polish and Czech military establishments were each responsible for forming a Front in wartime, as was the Soviet Carpathian Military District (MD) and probably the Belorussian MD. In each of these potential Front areas there were currently three or more field armies, a tactical air army, and limited additional combat and service support units.

For each potential Front, except the GSFG, much of the higher command and control structure and a majority of the service support units would have to be created by mobilization.

Other potential Soviet and East European Fronts probably exist in Bulgaria, the southern and far eastern USSR, and possibly, in the northwestern USSR. Ground armies and tactical air armies are stationed in each of these regions.

3. Combat Readiness

a. Order of Battle and Equipment Levels

We have reassessed the order of battle and equipment levels of the ground forces in the Belorussian, Carpathian, Kiev, and Moscow military districts and in the 11th Guards Army area (Kaliningrad Oblast) of the Baltic MD. [redacted] permit a high-confidence estimate of the numbers and locations of armies and line divisions in these areas and of the equipment levels of the divisions.

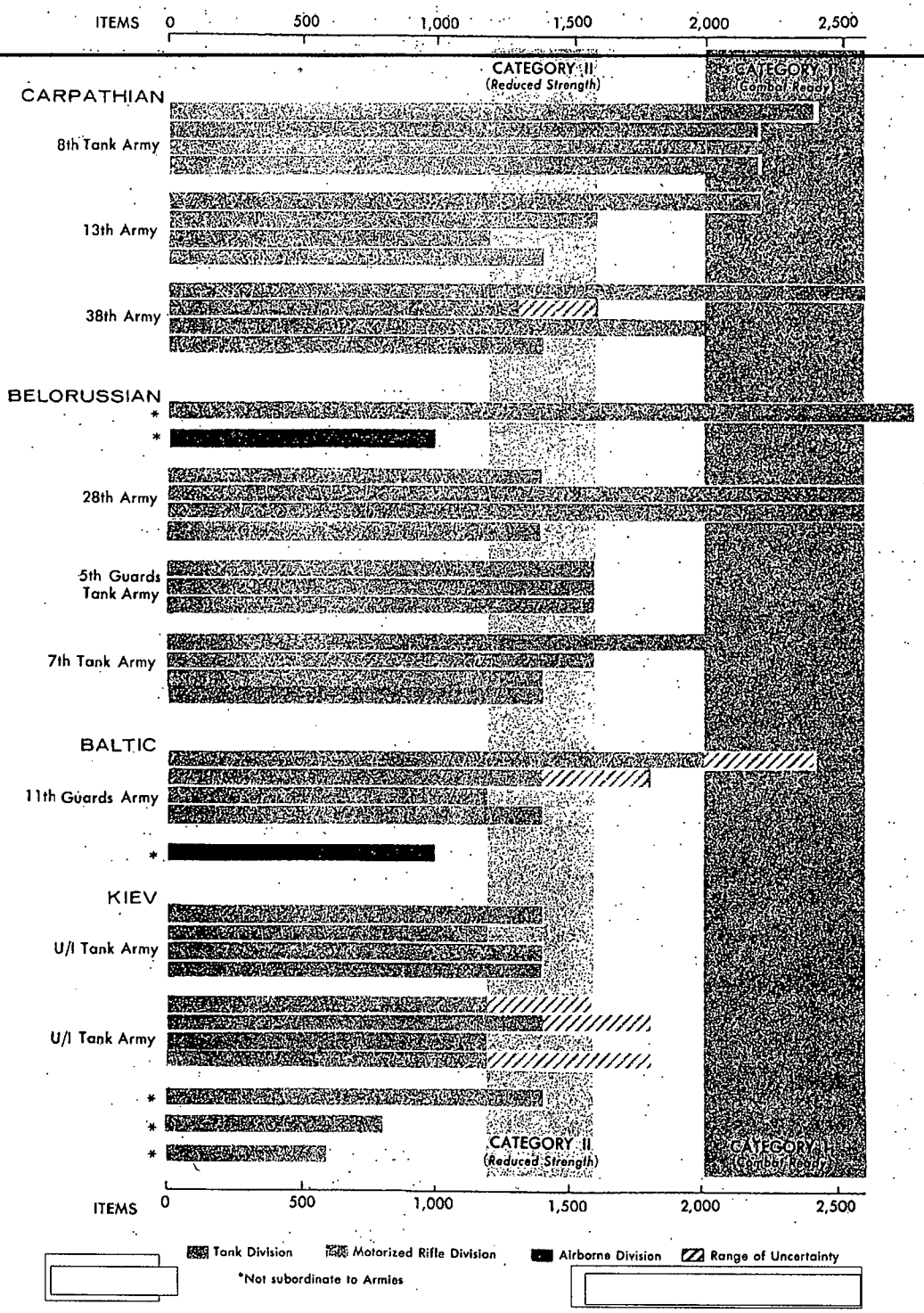
Our analysis has confirmed the existence of nine field armies in four of the MD's under review. These nine armies contain 35 divisions --19 tank and 16 motorized rifle. Another six divisions--including two airborne--are located in the vicinity of these army areas but apparently are not subordinate to them.

We have assessed these divisions against the equipment levels of combat-ready Soviet divisions in Germany and find that about 11 are probably equipped at similar levels. The results of this assessment are illustrated in Figure 5 (opposite page). It should be noted that equipment strength is not the only criterion for categorizing divisions--although it is the principal one. Other factors such as activity levels, training, and subordination were also considered. In a few instances, apparent equipment levels which suggest combat-ready status for some of these divisions were discounted by such other evidence.

These findings are consistent with our observations that these same divisions tend to have larger and more frequently used training facilities, and garrisons which appear generally more active, than the other divisions in the western USSR. The two airborne divisions--one in the Baltic MD and one in the Belorussian MD--are also combat ready.

Figure 5

Equipment Holdings of Western USSR Divisions



Of the remaining 28 divisions, 26 have equipment shortages ranging between 600 and 1,000 major equipment items. Our observations indicate that the shortage is mainly in general-purpose wheeled vehicles and armored personnel carriers. These divisions probably have all of their tanks and artillery. Two divisions in the Kiev MD, neither of which is part of an army, have no more than 800 vehicles and probably lack some of their combat equipment as well. About 800 of the major equipment items in a fully equipped Soviet division consist of combat and special-purpose equipment which has no civilian equivalent. The other 1,400 to 1,500 items are mainly general-purpose vehicles.

At least seven of the 26 equipment-short divisions were mobilized during the Czech crisis and their personnel and equipment levels were increased to war strength.

There are no field armies in the Moscow MD. This fact, along with the evidence that none of its three to five line divisions is fully equipped and the absence of army- and Front-level combat support, indicates that the ground forces in the Moscow MD are not intended for use as early reinforcements in the European central region.

b. Manning Levels and Combat Readiness

We have reassessed Soviet classified writings on reinforcement in light of new evidence on Soviet and other Warsaw Pact forces and find that all of the divisions in the field armies of the western USSR are probably intended to be available for deployment to Europe, immediately after they have been filled up to wartime personnel and equipment strength.

There are probably three categories of Soviet divisions: Category I consisting of divisions manned at between 80 and 100 percent strength and with most or all of their equipment; Category II manned at up to 50 percent personnel strength and with 50 to 70 percent of their equipment including all their tanks and artillery but with substantial shortages in APC's; and Category III manned

at up to 20 percent with about one-third of their equipment including only part of their combat equipment and few, or no, APC's.

Category I is available for immediate use, although if time permitted the Soviets would prefer to fill all of these divisions up with reservists. Category II could probably be filled with reservists and requisitioned civilian vehicles and made available for deployment within a week or less. Category III divisions would probably not be available for a month or more and, even then, would probably not be equipped at the standards of Category I and II divisions. No Category III divisions are believed to exist in armies in the western USSR. These divisions are probably intended as a base for long-term mobilization or for the reconstitution of strategic reserves.

The descriptions of categories of divisions in previous estimates have been based primarily on the statements of two Soviet authors writing in 1961 issues of the Soviet classified periodical, Military Thought. The principal source is Maj. Gen. Ya. Shchepennikov, author of "Support of the Strategic Concentration and Deployment of the Armed Forces in Respect to Transport." Shchepennikov stated:

> In speaking of strategic echelons, we mean that the first of these consist of the forces and weapons necessary for achieving the strategic aims of the initial period of the war; it is divided into several (not less than three) operational echelons. The first includes the troops and materiel that are in a full state of readiness for immediate operations, the second is the forces and weapons designated for increasing the efforts of the initial operations with readiness for proceeding to areas of concentration after several days, the third is the forces and weapons to be used only several weeks after the beginning of full mobilization for the development of the subsequent operations of the initial period of a war.

In the circa-1961 war plans, the first echelon of the Front was formed mainly by the Soviet forces stationed in Germany, while the second echelon was provided by the reinforcing armies from the western USSR. The third echelon was to come mainly from units newly formed after mobilization began, and may have been intended as reserves and replacements. It does not seem likely that any divisions with the western MD armies were a part of the so-called third echelon, since this would have destroyed the integrity of these armies by stretching out their deployment over a month or more of time and would have resulted in their simultaneously having some divisions in combat in Central Europe while others were still mobilizing inside the USSR.

The only mention in the Soviet classified articles of cadre divisions in field armies was a statement by Lt. Gen. S. Andryushchenko in an article entitled "The Deployment and Forward Movement of a Combined-Arms Army of a Border Military District in the Initial Period of a War." He said:

> In addition, we studied the combined-arms army made up of four or five divisions (two or three of them up to strength and the rest in cadre form or at reduced strength)...."

This somewhat ambiguous statement may indicate that the author was uncertain of the exact status of the divisions not up to strength, or that he considered the terms "reduced strength" and "cadre form" to be virtually synonomous. It is worth noting that, at the time of writing, Andryushchenko was the deputy commander of a separate army corps in the North Caucasus MD which may well have contained cadre divisions.

Other authors discussed only two categories of readiness in the context of early Front operations. The clearest statement is by Maj. Gen. A. Klyukanov in "The Most Urgent Problems

of Training Command Personnel and of Increasing the Combat Readiness of Border Military District Staffs," as follows:

> The demand for full mobilization of various large units within the shortest time is especially important for the formation of border military districts, because the speed of buildup of first-echelon troop strength, consisting of a limited number of divisions of increased combat readiness, will depend on the period required for fully mobilizing large units and units of reduced strength, from which, as a rule, the second echelons and reserves of armies will be created.

and

> Thus, in the peacetime composition of troops of a military district there are line divisions (of increased combat readiness) and divisions of reduced strength. The field command of an army, army units, and Front units are also kept at reduced strength.

In the book Military Strategy, General Sokolovskiy identified three categories in terms of strength but associated only two categories with initial operations:

> "...Some of the ground force units and formations designated to conduct initial operations and stationed in the border district ...are maintained in peacetime at a strength adequate to permit the execution of the main tasks of the initial period of the war. Another portion of these forces has a short mobilization period, enabling them to participate in the initial operations; and finally, a certain portion is kept at reduced strength in peacetime."

Most of the Soviet writings, when taken alone, are ambiguous in some particulars. For example, the terms "cadre" and "reduced strength"

appear to have different meanings depending on the context. The Soviets are consistent, however, in their statements that only two categories of units in the border districts would be involved in early operations. These units are generally spoken of as being available in a few days after beginning of mobilization.

This concept is entirely consistent with our understanding of Czech and Polish peacetime military strengths and contingency plans for war. These countries maintain only two categories of units in their peacetime establishment, and both categories are intended to be available for military operations in less than ten days. The first category is probably manned at between 70 and 100 percent of war strength and is fully equipped. The second category is at low strength (15 to 30 percent in the case of the Czechs) and must mobilize much of its equipment from the civilian economy. There is no evidence that either the Soviets or East Europeans expect to delay the deployment of these low-strength units any longer than the time required to fill them out with re-servists and requisitioned vehicles.

Assuming that equipment levels are related to strength, the evidence on specific divisions inside the USSR supports the existence of three manning levels but does not clarify terminology. The term "cadre" has been used to describe skeletal divisions which had only officers and has also been used for divisions at low strength but with some assigned enlisted men.

Our assessment of equipment holdings confirms that divisions fall into three groups as to equipment levels. One group has a range of 2,000 to 2,600 major equipment items, averaging around 2,300. A second group has between 1,200 to 1,600 and averages 1,400. All of the divisions in armies in the western USSR appear to fall in these first two groups. A third group, of which only a few examples have been studied, has an average of about 800 items. None of the third group is believed to exist in either the Belorussian or Carpathian MD's, or in armies in any of the MD's studied thus far.

The divisions in the first group consistently display other indicators, such as general activity levels and large well-used training facilities, which suggest high strength levels. The second group is more heterogeneous, with considerable variations in other indicators. There are, however, no indications of any dividing point in this group, either in equipment levels, activity levels, or general appearance of facilities. One of the smallest and least active of these divisions, with about 1,200 equipment items, was mobilized during the Czech crisis. When observed in photography about two weeks after the earliest date on which its buildup is likely to have begun, it had about 2,300 equipment items, including all of its tanks and artillery, but apparently had no APC's. Many of its general-purpose trucks appeared to be civilian types. The third group is characterized by very low activity levels and lack of indications of troop training.

We have no recent direct evidence of the actual personnel strengths of any divisions in the western USSR. These divisions, including one in an army in the Odessa MD, appear to have been at very low manning levels. One motorized rifle division, for example, reportedly had only 2,000 officers and men, or 20 percent of wartime strength. Their equipment levels are at about 1,200 items, the lower limit of the second equipment group, and their troop training facilities show light activity. These divisions are generally similar, in their observable characteristics, to the smallest, least active divisions in the western USSR armies.

Also, we have assessed the barracks capacity of three tank divisions in a tank army in the Kiev MD, all of which have relatively active troop training facilities and equipment levels of 1,200 to 1,400, and find that they probably have capacities for housing no more than 4,000 to 5,000 men each. We believe that these divisions are similar to those typical of the second equipment group in western USSR armies.

Table 1

Warsaw Pact General Purpose Forces Available for Central Europe a/

Currently Available Forces	Armies			Divisions		Estimated Wartime Strength		
	Combined Arms	Tank	Tactical Air	Category I	II	Men	Tanks	Aircraft
GSFG and East German Army	5	2	1	26	--	350,000	6,500	730
Czechoslovak Front	3	--	1	8	4	200,000	3,000	250
Polish Front	3	--	1	11 b/	4	250,000	3,700	200
Carpathian Front	2	1	1	7	5	200,000	2,800	350
Belorussian Front	1	2	1	4 c/	9	180,000	3,100	250
Northern Group of Forces in Poland	--	--	1	2	--	30,000	600	290
Baltic Military District	1	--	1	2 c/	3	50,000	900	260
Total	15	5	7	60	25	1,260,000	20,600	2,830
Strategic Reserve (Kiev Military District)	0	2	1	0	9	90,000	2,400	80
Total Available	15	7	8	60	34	1,350,000	23,000	2,410

a. Forces existing prior to the Czechoslovak crisis.
b. Includes an airborne division and an amphibious assault division.
c. Includes one airborne division.

4. Current Forces

Prior to the intervention in Czechoslovakia, the Warsaw Pact forces probably available for use against the NATO central region included the Soviet and East European armies and Front-level support units presently located in East Germany, Czechoslovakia, and Poland, and in the Baltic, Belorussian, and Carpathian military districts of the USSR (see Table 1, opposite page). Some permanent realignment of these forces is likely to take place in the aftermath of the intervention. The new alignment, although different in detail, will probably result in Warsaw Pact capabilities against NATO approximately equal to those obtaining before the intervention. We therefore describe them in their former state, recognizing that changes are likely, especially to the Czech role. (Figure 6, the foldout map following this page, illustrates the discussion in this section.)

a. Soviet Front in Germany

The Group of Soviet Forces in Germany (GSFG) is by far the largest of all the Warsaw Pact potential Fronts and is the only one which is believed to have all of its units--both divisions and support--sufficiently manned and equipped for combat without mobilization of additional men and vehicles.

The GSFG has five field armies--two tank and three combined arms--with a total of 20 Category I divisions. The 1st Guards Tank Army and the 3d Shock Army, each with four tank divisions and one motorized rifle division, are positioned in central East Germany and form the principal striking force of the Front. The 2d Guards Army, with two motorized rifle divisions and one tank division, and the 8th Guards Army, with three motorized rifle divisions and one tank division, are positioned on the flanks. The 20th Guards Army, with three motorized rifle divisions, is concentrated around Berlin. The Front's air support would be provided by the 24th Tactical Air Army, the largest existing Soviet tactical air force, and the only TAA containing an assault air transport regiment.

In an emergency, the Soviet Front in Germany would probably absorb the two East German armies and their six Category I divisions. The

Although the East German divisions are combat ready, some mobilization of vehicles and personnel would probably be required to complete the armies.

With its East German allies, the Front organized from GSFG would have about 350,000 men and 6,500 tanks. It would be supported by 730 aircraft, 150 nuclear-capable missile and rocket launchers, 1,600 artillery pieces (mostly of light or medium calibers, none of them self-propelled) and 300 multiple rocket launchers.

GSFG units train rigorously, although some aspects of this training, such as tank gunnery and small arms tactical firing, appear unrealistic. Their training exercises are designed to approximate as nearly as possible the emergency roles of the participants and thus serve as rehearsals. Practice alerts are held frequently, and divisions are reportedly required to be capable of assembling outside their garrison areas in combat-ready condition in two hours. To meet these standards the Soviets follow such practices as maintaining full combat loads of ammunition and POL on vehicles, and strictly controlling the whereabouts of troops during off-duty hours.

On the whole, GSFG is a large and powerful force with a good potential for penetrations with massed armor in areas suitable for tank movement. However, its infantry strength is low, and it does not yet have armored personnel carriers (APC's) in sufficient numbers or of appropriate design to match the speed and flexibility of the tank forces. Although Soviet tactical doctrine emphasizes infantry combat in moving APC's, the current low allocation of APC's to GSFG motorized rifle battalions tends to destroy small-unit integrity and crowds the riflemen inside the vehicles so as to hinder their weapons firing. Furthermore, about half of the APC's are still of the old BTR-152 type, which are not amphibious and have poor off-road mobility.

The GSFG's relative lightness in infantry capability, coupled with its small provision of artillery--all of which is towed and therefore quite vulnerable to air attack--might handicap it seriously in a combat situation which did not favor tanks.

GSFG divisions are capable of only about three days of intensive combat with their organic mobile supplies and depend on the early institution of full-scale logistical support from the rear to maintain offensive momentum. This support must be provided mainly by the Front, since the armies probably have no more than a small mobile reserve of one or two additional days of supply. We believe that the GSFG Front-level organization exists in peacetime. Analysis of GSFG indicates that its Front-level rear services organization is probably maintained at full strength in peacetime.

b. Czechoslovakian Front

Prior to the Soviet intervention, the Czechs were responsible for organizing a Front to cover the Warsaw Pact southern flank in the central region. This Front was charged with the mission of securing crossings over the Rhine in its zone of operations but, in reality, the Soviets probably expected it to do no more than wear down NATO forces and defend Czechoslovakia long enough for Soviet reinforcements to get there.

We expect that Czechoslovakia will continue to maintain armed forces of about the current size and that these forces will be available to the Warsaw Pact. The Soviets probably will judge their reliability as low in the foreseeable future and take measures to offset this as much as possible. These measures might include retention of Soviet units inside Czechoslovakia, strengthening of Soviet forces in Poland and the western USSR, or both. In addition, they may also assign Soviet officers to positions where they could more directly influence the Czech high command.

The Czech forces include three field armies and a tactical air army. There are two field armies in the western part of Czechoslovakia, each with four divisions and support units. These divisions and their support units are probably manned at 70 percent strength or better and are sufficiently equipped for combat. In an emergency, these units were expected to deploy into combat without reinforcement. If time permitted, however, they were to be filled up with reservists.

The third Czech army, located in eastern Czechoslovakia, is in cadre status. The cadres of four divisions, each at 15 to 30 percent of wartime strength, are consolidated under two commanders in peacetime for economy. The combat equipment for all four divisions and the army support units is stored in eastern Czechoslovakia, but only about half of the wartime requirement of wheeled vehicles is on hand. In an emergency, the Czechs planned to fill up the army and divisional units partly with reservists. The necessary additional wheeled vehicles along with their drivers were to be requisitioned from the civilian economy.

[redacted] the Czechs planned to complete their mobilization in three days. In that time they expected to deploy their two western armies into combat and assemble the army from eastern Czechoslovakia. We believe that the Czechs would probably have been capable of deploying their two western armies within three days or less.

Their plan to complete the mobilization and deployment of the third army and of the Front support organization in this time period was less realistic since it would have depended on the successful completion of complex procedures. These would include the transfer of numerous officers and NCO's from terminated peacetime activities and their integration into the Front and army organization, and the mobilization of some 40,000 reservists and as many as 10,000 vehicles. The completion of this mobilization, which was never fully tested, might have required a week or more.

When fully mobilized the Czech Front would have consisted of about 200,000 men and 3,000 tanks. It would have been supported by 250 aircraft, about 40 nuclear-capable missile rocket launchers, 650 artillery pieces, and 150 multiple-round rocket launchers.

c. Polish Front

The Polish armed forces are responsible for organizing and deploying a Front consisting of three Polish field armies and a tactical air army. Two of the field armies, one organized from the Pomeranian MD and one from the Silesian MD, constitute the first operational echelon of the Polish Front and are prepared for combat within a few hours after being alerted. The nine divisions in these two armies--five tank and four mechanized--are Category I and are probably manned at between 70- and 100-percent personnel strength and have all their vehicles and equipment. The support units of these two armies are also probably at sufficient strength for immediate deployment.

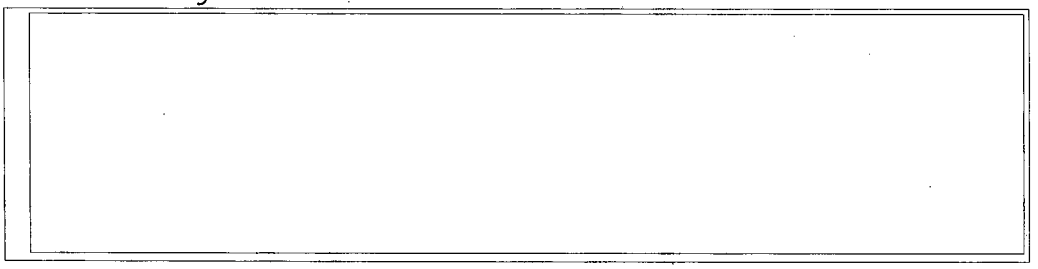
The second echelon of the Polish Front would be formed by an army from the Warsaw MD. Its four mechanized divisions and its support units are Category II. They are probably manned at less than half strength in peacetime and are short much of their general-purpose transport equipment. The preparation of this army for combat, including the mobilization and integration of reservists and civilian vehicles and the organization of army-level command and control and logistic organizations, would probably require seven to ten days.

In addition to the line divisions in armies, the Poles have an airborne division and an amphibious assault landing division. Although small, these divisions are probably available for immediate deployment. The airborne division would have to rely on Soviet aircraft for transport.

The Front headquarters is formed by cadres from the Polish Ministry of National Defense, supplemented with reservists. The Front support units, particularly those concerned with supply, maintenance and transportation, would largely be

created during mobilization. Part of these units would be formed using cadres from existing peacetime organizations and functions, but many would be provisional units formed almost entirely from civilian institutions such as hospitals or transport organizations.

As is the case with Czechoslovakia, the rapid creation and deployment of a Front's command, control, and support organization is the most critical and complex task involved in preparing the Polish armed forces for war. Although the tactical elements of the Front first-echelon could begin deployment, and even enter combat, largely on the basis of predetermined contingency plans, their subsequent direction and support would depend on the capability of the Front to begin carrying out all its functions within a few days after mobilization begins.



When fully mobilized, the Polish Front would probably have about 200,000 men and 3,700 tanks. It would be supported by some 200 aircraft, the bulk of which are the older MIG-15's and MIG-19's, by about 65 nuclear-capable missile and rocket launchers, as many as 1,000 towed artillery pieces of light and medium calibers, and about 170 multiple-round rocket launchers.

The main strength of the Polish Front, as with the Soviet Front in Germany, lies in its large number of tanks. The Polish infantry is relatively light and has very few armored personnel carriers. Most of the infantry is probably transported in cargo trucks.

The major weakness of the Polish Front stems from its dependence on a complex and awkward mobilization procedure, and from the necessity to deploy all of its forces westward into Germany before they could be committed in an offensive. The critical nature of these mobilization and movement actions lies not only in the fact that the operations of the Polish forces depend on them but also in their vulnerability to interruption if attempted after hostilities begin.

d. Carpathian Front

Before the Czech intervention, the Soviets had planned to form a Front from the Carpathian Military District to replace the Czech forces after the initial hostilities in the central region. The Front would be formed from existing units of the Carpathian MD, supplemented by mobilization. These forces consist of three field armies, a tactical air army, and some combat and service support units.

The three field armies include the 8th Tank Army with four tank divisions, and two combined arms armies, the 13th and 38th, each with four motorized rifle divisions. All four of the tank divisions in the 8th Tank Army probably are combat ready, but its support units are probably at reduced strength and would require some mobilization of personnel and vehicles to become combat ready. Prior to the Czech intervention, the 13th Army had one combat-ready division while the 38th Army had two. The remaining five motorized rifle divisions were Category II with reduced personnel and equipment strength, as were the combat and service support units of these armies.

In addition to its divisions, each of the Carpathian armies has a Scud brigade, an artillery brigade, a surface-to-air missile regiment, and an engineer ponton and assault crossing regiment. One of the combined-arms armies also probably has a separate heavy tank and assault gun regiment.

Front support units include two artillery divisions of about 150 guns each, both of which are probably at low or cadre strength, plus a Ganef surface-to-air missile unit, and a tank transporter unit with about 150 heavy transport vehicles. The command and control organization of the Carpathian Front and most of its Front-level support units are probably manned and equipped at no more than half strength.

We believe that the Carpathian MD has a higher level of combat readiness than any other MD in the USSR. The tank army could probably complete its mobilization and deployment into Czechoslovakia in about one week. The other two armies could move their combat-ready divisions into Czechoslovakia within a week, but the remainder of the two armies and the front support units probably would require an additional week to move up.

The 38th Army controlled four divisions in the Carpathian MD which threatened and later intervened in Czechoslovakia. These included all three combat-ready divisions of the 13th and 38th Armies, plus one from the 8th Tank Army. A portion of the Carpathian MD's forces were mobilized under cover of the July-August rear services exercise to support this deployment. As many as three Category II divisions from the 13th Army were mobilized at the same time but not deployed.

The Czechoslovakian situation probably obliged the Soviets to deploy an army made up of divisions detached from several other armies because the deployment occurred well before the partial mobilization. The only army in the western USSR which had all of its divisions combat ready at that time was the 8th Tank Army. The 8th Tank Army was probably considered less suitable for the purpose since all its divisions were tank divisions. These are less useful than motorized rifle divisions for the kinds of activity, including occupation duties and combat in cities, which were probably anticipated. Moreover, the Soviets may have preferred to keep most of the 8th Tank Army available for its primary contingency role against NATO.

When full mobilized and deployed the Carpathian Front would have about 150,000 men and 2,800 tanks. It would be supported by about 350 aircraft, 65 nuclear-capable missile and rocket launchers, 1,000 light and medium field artillery pieces, and 150 multiple-round rocket launchers.

e. Belorussian Front

The Belorussian Military District is similar in size and organization to the Carpathian MD but is at a lower stage of combat readiness and has less support. It is probably intended to form a Front for use in the central region.

There are three field armies, one combined arms and two tank, and a tactical air army in the district. Prior to the Czech crisis, none of the field armies was ready for immediate deployment. The 28th Army has four divisions, of which two were Category I and two Category II. The 5th Guards Tank Army and the 7th Tank Army have a total of seven divisions, all of which were probably Category II. The three divisions of the 5th Guards Tank Army were mobilized for the Czech crisis but not deployed. The Belorussian MD has an additional combat-ready motorized rifle division not assigned to any army. An airborne division is also located in the MD but is subordinate to the Airborne Forces Headquarters at Moscow.

There are fewer combat support units in the Belorussian MD than in any of the other Soviet potential Fronts for Central Europe. Neither of the tank armies has an artillery brigade, and the artillery unit for the combined-arms army apparently is only of battalion size. Only two possible Scud brigades have been detected. Each army does have a surface-to-air missile regiment and an engineer pontoon unit. The engineer units appear to be at low personnel and equipment strength. Each of the tank armies appears to have a medium antiaircraft gun brigade of about 100 guns, apparently in cadre status. Front-level support consists of an artillery division at reduced or cadre strength and a tank transporter unit with about 350 transport vehicles.

We believe the Belorussian MD could produce a Front which could probably complete its mobilization and deployment into western Poland or East Germany within two or three weeks. This Front would consist of about 140,000 men with 3,100 tanks, supported by 250 aircraft, about 50 nuclear-capable missile or rocket launchers, 650 artillery pieces and 150 multiple-round rocket launchers.

f. Baltic Military District

The Baltic MD contains a combined-arms army--the 11th Guards Army--and an airborne division which are available for the central region. There is also a tactical air army of 260 aircraft. Between 17 July and 10 August 1968 the 11th Guards Army, which had one Category I and three or four Category II divisions, was fully mobilized and began a movement into north-central Poland. By the end of August it was located in the area of the East German-Czechoslovak border, and there are indications that it will remain in Czechoslovakia as part of the Soviet occupation force.

g. Soviet Forces in Poland

The Soviet Northern Group of Forces (NGF) in Poland has only two tank divisions, both of which are probably Category I. However, the NGF has combat support units approximating those in a typical Soviet field army, and also has a large tactical air army with 290 aircraft. There is no evidence to indicate the intended wartime role of NGF. Its units could be used to reinforce either the GSFG or the Polish Front, or they could form a part of a theater reserve. Apparently none of the NGF ground forces were involved in the Czechoslovak intervention. However, about 75 aircraft of the 37th Tactical Air Army from NGF were used in Czechoslovakia.

h. Strategic Reserve

Simultaneously with the mobilization and deployment of the Fronts, the Soviets would probably begin developing a strategic reserve under the direct control of the High Command. The reserve

would be intended to reinforce and replenish the forces in the central region or elsewhere. Initially it would probably include those forces in the western USSR which were not committed to the Fronts, and which are organized into field armies in peacetime.

We believe that the two tank armies in the Kiev MD, each of which currently has four Category II divisions, would constitute the core of the strategic reserve. One additional Category II division, not assigned to either army, would probably also be available. Both armies have combat support units including Scud brigades, artillery brigades, engineer regiments, and probably surface-to-air missile units.

Both armies and the additional division could probably be available for deployment from their present locations within about two weeks after mobilization began. Two Category III divisions in Kiev MD would not be available.

5. Mobilization and Deployment

Mobilization of men and vehicles on a large scale and the rapid deployment of forces into the European central region are essential prerequisites of Warsaw Pact preparations for war. In peacetime the Soviets and their Eastern European allies keep only about two-thirds of their ground forces at sufficient personnel and equipment strength for immediate combat. These consist mainly of the Soviet forces in Germany and Poland plus a part of the Czech, East German, and Polish tactical units.

A few additional Soviet forces in the western USSR are also kept ready for deployment into Central Europe. The rest of the combat and combat support units would have to be filled up with men and vehicles and moved up to 600 miles westward before they could be used. Furthermore, most of the Front rear services organization and a large part of the field army service support would have to be mobilized to support the deployment and combat use of the Eastern European divisions and the Soviet reinforcement.

The Warsaw Pact countries have mobilization plans providing for the rapid assembly and assignment to units of the additional manpower and vehicles needed to fill out the combat units and develop the Front organizations. Detailed procedures are laid down in the Soviet military districts and in the Eastern European countries for implementing the mobilization plans.

The Soviets maintain a large pool of reserve manpower which includes not only able-bodied former servicemen but also men without prior military service who have certain technical qualifications such as drivers, mechanics, and medical personnel. Reservists can be called up for active duty as individuals or as members of reserve (or "militarized") units which are called up together. These reserve units are formed in civilian motor transport organizations, hospitals, and other state institutions.

The Soviet system also involves the registration of civilian vehicles and other materiel such as engineer equipment. These items are inspected periodically by military authorities and classified according to their condition, age, and suitability for mobilization. Vehicles and equipment in the organized reserve units as well as other civilian items are registered.

The Warsaw Pact reserve manpower pool and vehicle inventory is large enough to provide all the men and vehicles needed to complete the forces earmarked for use in Central Europe in the early stages of war. The efficiency with which the mobilization process would be carried out is less certain. The magnitude and complexity of the preparations and the task of implementation almost ensure that it will not go smoothly.

Both the Soviets and Eastern Europeans, however, are known to have repeatedly practiced elements of the mobilization process. There is evidence that reservists are called up for periods of one or two months but at rather long intervals of three to five years. There are also reports

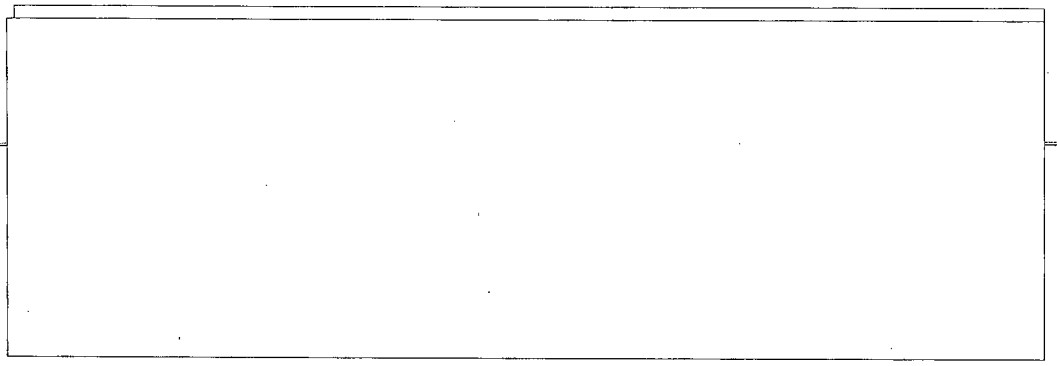
that vehicles and drivers are called up on practice alerts during which they report to their designated units. We have observed large numbers of what appear to be civilian vehicles parked in a number of Soviet divisional installations during the summer training season.

Redundancy is built into the mobilization system in an effort to make up for its inherent shortcomings. In practice mobilizations, some low-strength Soviet and Eastern European divisions have reportedly been overfilled by as much as 20 percent of their wartime personnel strength.

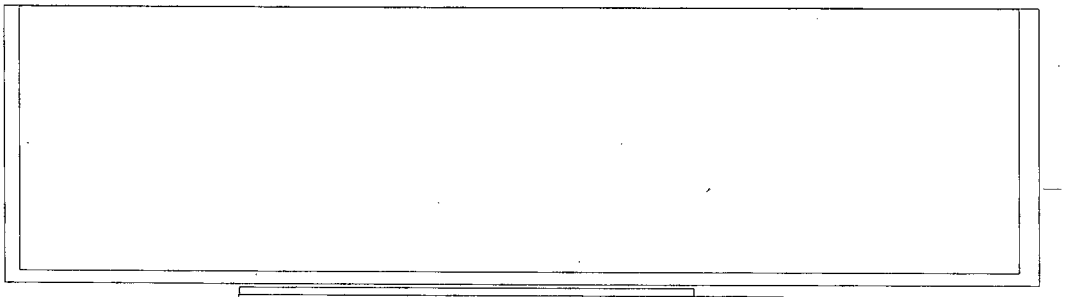
The Warsaw Pact mobilization plan is complex and vulnerable to interruptions if attempted after the beginning of hostilities. More than 21,000 vehicles would be needed to complete the mobilization of the low-strength divisions in the Belorussian and Carpathian MD's and the three additional armies in the Baltic and Kiev MD's. The army and Front-level organizations of these forces would probably require from 15,000 to 20,000 additional vehicles.

The movement of mobilized Warsaw Pact forces from their peacetime location into the theater of operations, and thence into combat, is closely related to the mobilization process itself. In Warsaw Pact doctrine, mobilization and deployment are viewed as integrated components of a single process--reinforcement.

the classified writings of the Pact countries invariably portray mobilization and deployment as taking place in reaction to some western initiative--either an outright attack against East Germany or Czechoslovakia, or some other action which causes a sudden heightening of tension. However, the selective mobilization and deployment of Soviet and Polish forces in preparation for the Czechoslovak intervention, although smaller in scale, probably approximates the time schedule they would plan for in a deliberate reinforcement.



In the Hungarian intervention in 1956 the Soviets probably began some preliminary mobilization steps on 19 October in response to the Polish crisis. Units from the USSR began arriving in Hungary on 25 October and the reinforcement was completed by 4 November, 16 days after the initial alert.



the Soviet Carpathian Front was to begin arriving in Czechoslovakia on the fourth day of hostilities (D+3)

On balance, the evidence indicates that the Soviets believe they could complete the essential elements of reinforcement in Central Europe within about ten days if the need were sufficiently urgent. If given a choice, however, it appears that they would plan to take about three weeks to complete the reinforcement.

The most time-consuming and critical aspect of mobilization is the organization and filling out of the Front and army rear services. These units are the least combat ready in peacetime, and important elements of the rear services

exist only on paper, or as portions of the civilian economy. Category II divisions can probably be mobilized and deployed in a matter of days. They cannot be sustained in combat more than a few days, however, without full logistical support by the Front rear services.

We believe that the Warsaw Pact is capable of mobilizing the men and vehicles required to organize the five Fronts intended for Central Europe in a matter of days if the process is not interrupted by hostile military action. However, their complete integration as functioning, combat-effective units, particularly at the Front level, is likely to require more time. In an emergency the mobilization of the Carpathian and Belorussian Fronts and their movement into Central Europe could probably be accomplished in two weeks or less, although some important elements of the Front rear services might still be incomplete at that time. In a situation where time was of their choosing, the Soviets would probably plan to take about three weeks to complete the reinforcement.

The initial combat effectiveness of Category II divisions, and of armies made up mostly from such divisions, will certainly be much lower than that of the GSFG. However, these forces are probably not intended to meet fully combat-effective NATO divisions. Rather the Soviets would expect to commit them after their first-echelon Fronts had endeavored to reduce NATO's capabilities.

6. Equipment Modernization

New evidence [redacted] the Soviet inventory of armored personnel carriers probably includes about 14,000 vehicles of all models, about half of which are still obsolescent BTR-152's. This total is only a little more than half the estimated requirement for APC's and is consistent with other evidence which indicates that only Category I divisions are fully equipped with APC's and that some low-strength divisions have few or none.

The BTR-152 has poor cross-country mobility and is not amphibious. The BTR-60, which is gradually replacing the BTR-152, is amphibious and has better cross-country mobility. It still does not appear to be a satisfactory vehicle, however, due to its large size, high silhouette, and topside entrance hatches. These characteristics result in maximum exposure of the crew to enemy fire while dismounting or mounting.

The Soviets have recently exhibited a new armored amphibious tracked carrier mounting a turreted 76mm cannon and a Sagger antitank missile, with space for ten men. This vehicle appears to have better characteristics than the BTR-60 and is designed to carry a Soviet squad rather than all or most of a platoon as is the case with the BTR-152. Deployment of the new vehicle has begun, and we expect it to replace a limited number of APC's in Category I tank divisions. It may also be employed as a reconnaissance vehicle, replacing the PT-76 light amphibious tank or the BTR-40 armored amphibious reconnaissance vehicle, or perhaps both.

Soviets are terminating production of the T-55 medium tank, leaving the T-62 as the only medium tank in current production. About 4,000 to 5,000 T-62's have probably been produced thus far, representing no more than 15 percent of the total Soviet medium tank requirement. About half the T-62's have probably gone to Soviet divisions in Germany and to Category I divisions in the western USSR. Probably between one-third and half of the tank battalions in these areas are equipped with T-62's. Many of the remainder of the T-62's have probably gone to units along the China border, leaving small numbers to be distributed among the rest of the Soviet divisions.

We believe that by 1969 the Soviets will begin producing a new main battle tank. If the new tank realizes the design characteristics anticipated in official Soviet writings, it will probably have increased speed, a high-velocity cannon with an automatic loader, and possibly an antitank missile launcher.

Field artillery developments are marked by the continuing introduction of the 122mm howitzer Model D-30 into both tank and motorized rifle divisions. This weapon is now the prevalent field piece in Category I divisions.

The 122mm multiple rocket launcher, which can fire a 40-round salvo, is also being introduced into both types of Soviet divisions to replace their old 140mm 17-round and 240mm 12-round launchers. In addition to its much greater salvo capability, the new weapon has greater range than either of the older systems.

There are indications that the Soviets are increasing the number of field artillery pieces in the division. At least one Soviet motorized rifle division in Germany has been observed with 54 guns instead of the 48 normally assigned to motorized rifle divisions. Similarly, sightings of Soviet tank divisions in East Germany indicate a probable increase from 36 to 42 guns in those divisions. These increases, along with the increased firepower of the new multiple-round rocket launcher, indicate that the Soviets see a requirement for greater nonnuclear fire support.

Some helicopter units are beginnning to receive the turbine-powered MI-8 Hip, which can carry about 28 troops or 5,000 pounds of cargo to a radius of 125 nautical miles. This helicopter has nearly double the payload capacity of the MI-4 which is currently in service with most units. Bulk loads such as an antitank gun can be loaded through clam-shell doors in the fuselage.

The capability for short-range lift of heavy equipment in combat operations is being improved through the introduction of the MI-10, a flying crane derivative of the MI-6 large cargo helicopter. The cargo of the MI-6 includes tracked vehicles, trucks, and field guns. The MI-10 can transport 21,000 pounds of cargo to a 140-nautical-mile radius. In addition to increased weight, this helicopter also offers advantages in the transporting of off-size cargo or bulky equipment. The MI-6, which currently provides most of the heavy lift capability, carries a normal load of about 13,000 pounds.

The KA-25K medium flying crane probably will enter service with tactical units to fulfill a number of functions, including troop carrying and logistics support.

The Soviets are developing a huge new transport aircraft--a winged helicopter--for short takeoff and landing operations with a takeoff weight on the order of 200,000 pounds, more than twice that of their giant MI-6 and MI-10 helicopters, and a payload of some 30 tons. This aircraft could significantly increase Soviet short-range (under 200 nautical miles) airlift capabilities, but is not likely to enter service until well into the 1970's.

7. Airlift Capabilities

a. Expanding Mission

As Soviet military airlift capacity and range has increased, the Soviets have enlarged their demands on Military Transport Aviation (VTA). They now expect VTA to support the airborne troops in independently neutralizing or occupying strategic objectives, of which the recent occupation of Prague is a vivid example.

The Soviets have begun to rely more heavily on military airlift in support of their military-political adventures such as those in the Middle East. The most militarily significant example has been the delivery of fighter aircraft to Middle Eastern and North African countries following the June 1967 war. It is likely that this reliance will increase dramatically in the 1970's as new aircraft with range and payload capabilities become available. Although the airlift potential will continue to increase with the assignment of new aircraft, Soviet airborne intervention forces would still face the possibility of destruction while en route to their objective. Fighter escort from the USSR is, generally speaking, only possible to a radius of 500 nm.

b. Military Airlift Capabilities

VTA-Airborne lift capabilities have improved steadily since 1959 when modernization began. VTA-Abn now has 760 aircraft, including some 630 AN-12 transports. These aircraft could, on a single mission, lift airborne assault elements totaling about 8,400 men with supporting equipment to a radius of 760 to 920 nm or a range of 1,200 to 1,440 nm depending on the number of each AN-12 variant available and the manner in which they are loaded. A force consisting of the most improved variants of this aircraft could lift at least 1,800 paratroops with supporting equipment to a radius of 1,500 nm.

The AN-12 can airlift major items of specialized equipment such as artillery, certain short-range surface-to-surface missiles, antitank weapons, assault guns, and rocket launchers, but cannot carry tanks and other similarly bulky equipment. These aircraft are well suited for airlift missions to a range covering all of Europe and much of Asia and Africa.

The ability of VTA-Abn to respond to special situations is constrained by the number of transport aircraft which must be held in the USSR to meet other high-priority objectives, including various war contingencies. However, out-of-country airlift operations using 100 to 125 AN-12's--about one-fifth of the VTA-Abn strength--have become common.

The limited range of the forces' mainstay--the AN-12 Cub medium transport--militates against truly large-scale long-distance airlift operations. Some of the AN-12's have been modified, however, for extended-range missions. One such version can carry small contingents of troops and equipment or high-priority cargo to as far as 4,200 nm without a refueling stop.

Soviet capacity for distant airlift will not be improved significantly until the early 1970's when an appreciable number of AN-22's become available. The aircraft is entering service, and 30 to 60 could be assigned by mid-1972. There are

no jet-powered military transports such as the C-141 and C-5 under development, however, to provide a faster response to high-priority airlift requirements.

c. Military Potential of Civil Aircraft

The civil airline Aeroflot--with some 2,100 active multiengine transports in the light, medium, and heavy categories and with crews accustomed to operating under austere field conditions--could significantly augment Soviet military airlift capabilities. Many would be so tasked during wartime.

The light piston-engine and turboprop aircraft which make up over one-half the Aeroflot multiengine force would be used effectively on temporary airstrips. However, many of the medium and all of the heavy transports would have to use improved airfields with permanent runways. They could be effectively used for ferrying troops to well-developed airfields, routine delivery of small cargo, and air evacuation.

Medium transport strength in Aeroflot will probably increase through at least 1968 with the continued delivery of IL-18 Coot four-turboprop transports, and is expected to rise again after 1970 when the TU-154 triple-turbofan aircraft becomes available.

Heavy transport strength should increase with the delivery of increasing numbers of IL-62 Classics and possibly the introduction of AN-22 Cock heavy assault transports. Although it is expected that initially most, if not all, AN-22's will be delivered to VTA-Abn, there are numerous indications that these aircraft will be extensively used either by Aeroflot or by the military in support of Aeroflot operations.

The total number of light transports may show some increase during the next several years. The retirement of older piston-engine models probably will continue, but this reduction should be more than offset as newer models with greater lift capabilities are obtained.

The number of very light utility transports will decrease as obsolete models are retired, but others such as the twin-engine AN-14 Clod will offset some of the reduction. Helicopter strength is expected to remain high. Models which either have entered, or may enter service at any time are the MI-8 Hip, MI-2 Hoplite, the KA-26 Hoodlum, and the KA-25K.

8. Future Posture

The size and disposition of the Soviet ground forces over the next few years will probably be influenced strongly by how the Soviets view their requirements for defense in Central Europe and by their political relations with China. In the aftermath of the Soviets' intervention in Czechoslovakia and their probable loss of confidence in the Czech military contribution to the Warsaw Pact, they will probably make some permanent changes in the strength and disposition of Soviet forces in the West. The buildup of ground forces opposite China, which has probably already doubled the force in that region, is likely to continue through the early 1970's unless the political situation in China moderates substantially.

There are current indications that the Soviets are establishing at least four more divisions in the Sino-Soviet border region--all of them in the two operational groupings which they are developing in the southern Maritime Territory and the southeastern Transbaykal. The Soviets may be aiming for the eventual development of a Front in each of these two regions since a Front is an essential element of Soviet organization for extended joint operations. If so, they might, in the next few years, create at least one additional field army in the southern Maritime Territory and also develop their forces in the Transbaykal and eastern Mongolia into two or more field armies and a tactical air army.

In the west, the Soviets will probably take measures to ensure the continued availability of strong, reliable forces on their southern flank in the central region. These measures, which may

include the permanent stationing of Soviet ground forces in Czechoslovakia, will probably be aimed at developing combat-ready Soviet forces, approximating a Front, in the Czech sector.

The direction of these trends is toward a substantial increase in Soviet requirements for personnel and equipment for the ground forces and, consequently, in their expenditures for new facilities, operations, and maintenance. In terms of forces, they might raise the number of Category I divisions by as many as 30 and require substantial additional army and Front-level support forces.

The cost of satisfying all of these requirements would be quite high without offsetting reductions. Substantial savings might be made in time through a radical reorganization of the ground forces establishment, which currently retains many bases and activities which apparently make little direct contribution to military capabilities. There is no evidence, however, that the Soviets seriously contemplate any such reorganization. Inertia and the tenacity of special interests are more likely to prevail. The requirements for other military programs, particularly in the strategic forces are also tending to rise sharply, and no significant savings are in prospect there.

The magnitude of these competing requirements is so great that compromises will almost certainly be necessary. We expect that, at least for the next year or so, the highest priority in the ground forces is likely to be accorded to increasing Soviet combat readiness in the forces for Central Europe. The buildup opposite China might be slowed down to accommodate the unexpected requirements resulting from the Czech crisis. In any case, we believe that the Soviet ground forces will continue to increase in size and in combat readiness for the next several years.

B. Tactical Aviation

1. Mission and Organization

The primary mission of Soviet tactical aviation is the support of ground operations in the field. Although the force has a secondary responsibility to support air defense (PVO Strany) of the USSR, its organization and equipment reflect an emphasis on operations in a ground war environment. The major tasks of tactical aviation in supporting ground forces are air superiority and continuous air defense of the combat area, close support of battlefield operations, interdiction, neutralization of the enemy's means for delivering nuclear weapons, and reconnaissance.

Soviet theory of employment of tactical aviation is reflected in the organization of the force. No separate headquarters for tactical air forces (TAF) exists on a national level. Instead, the forces are integrated components of Fronts. The commander of the tactical air army (TAA) within a Front is a deputy to the Front commander, a ground officer, who is usually directly subordinate to the Supreme High Command in Moscow.

2. Deployment

Major air armies are deployed with the three groups of forces in Eastern Europe and in eight military districts in the USSR. In addition, a small air army is assigned to the Kiev Military District (MD), and a small military district air force is assigned to the Moscow MD. New tactical air units established in the Transbaykal MD during the past year near the Sino-Soviet border have resulted in an increase in the overall force level of Front aviation. It is likely that additional new units will be established in the Transbaykal MD, resulting in the creation of a TAA in that district.

Deployment of the tactical air forces continues to reflect a heavy orientation against NATO, and this is expected to last for several years. Nearly 70 percent of the combat aircraft are assigned to air armies in Eastern Europe and in the four military districts on the western border of the USSR. By far the largest of the air armies is the 24th TAA in East Germany, which contains nearly 750 combat aircraft. This air army and the 57th TAA in the Carpathian MD together

Table 2

Estimated Numbers of Soviet Tactical Aircraft
1 October 1968

Mission	Aircraft Inventory								
	Total	MIG-17 Fresco	MIG-19 Farmer	MIG-21 Fishbed	SU-7 Fitter	YAK-28 Firebar	IL-28 Beagle	YAK-28 Brewer	YAK-27/28 Mangrove/Maestro
Air defense	1,550	130	65	1,330		25			
Ground attack	1,040	550			490				
Light bomber	360						190	170	
Reconnaissance	550	20		120			260		150
Total	3,500	700	65	1,450	490	25	450	170	150

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account for about one-third of all the combat aircraft in Front air forces.

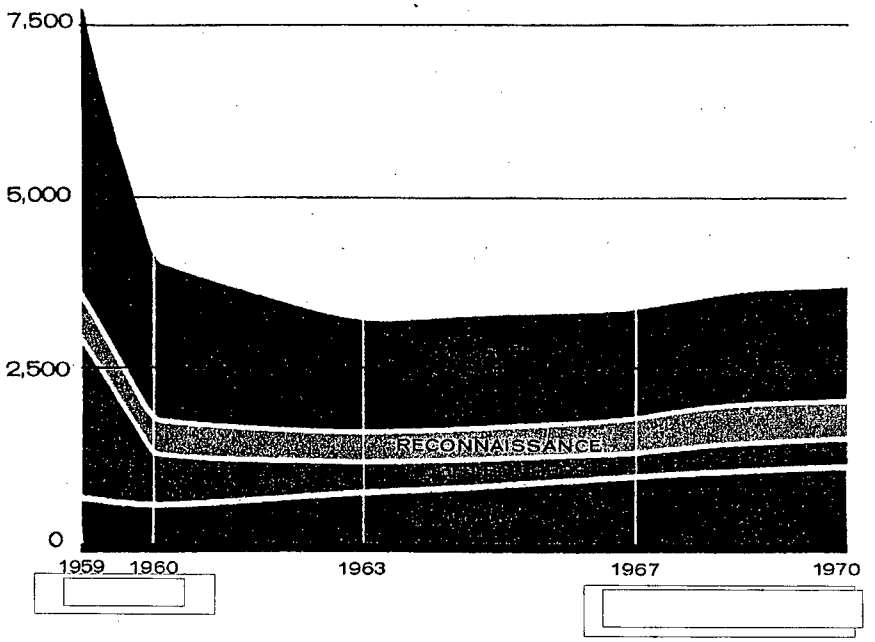
3. Force Composition

About three-fourths of the 3,500 combat aircraft in Soviet tactical air units are assigned to fighter regiments. These regiments usually are designated for either air defense or ground attack, although they all train for both missions. The aircraft are generally specialized for one mission and are of only limited effectiveness in their secondary roles. The ground attack capabilities of the fighters assigned to air defense regiments are limited by their relatively short combat radius and small payload capacities. Conversely, the fighter-bombers assigned to ground attack regiments are not equipped with airborne intercept radar and are armed only with guns and unguided rockets.

Only about 360 light bombers are deployed with strike regiments in the tactical air forces, and more than 500 aircraft of various types are assigned to reconnaissance units. (See Figure 7, below, and Table 2, opposite page.)

Figure 7

Soviet Tactical Aviation: Aircraft Inventory



4. Concepts Underlying Current Force

The size, composition, and capabilities of Front air forces in 1968 are the result of reorganization and re-equipment programs begun in the 1959-1961 period. The force was reduced during this time to its present size from a level of about 7,500 aircraft and the new-generation aircraft--MIG-21 fighters, SU-7 fighter-bombers, and YAK-28 light bombers--began to enter service.

The reorganization and re-equipment programs reflected the new Soviet military doctrine. The advent of nuclear weapons eliminated the need for large formations of bombers to destroy a target. In addition, it was felt that many of the tasks traditionally assigned to aircraft could be handled more effectively and economically by the surface-to-surface missile systems then becoming operational. These developments led to changes in the relative importance attached to the tasks of tactical aviation.

The role most affected by the changing Soviet concepts was that of the "front bomber," or tactical strike aircraft. The tactical missile forces took on much of the responsibility for interdiction and strikes against fixed targets. The primary mission remaining for the TAF bomber is to carry out strikes against mobile targets in the enemy rear.

Special emphasis is given to the destruction of enemy means of nuclear attack. The number of tactical aircraft needed for this function has been reduced, however, by the increased availability of medium bombers for this purpose. Since the reorganization of tactical aviation in 1959-1961, the Long Range Aviation (LRA) medium bomber force has become increasingly oriented to Eurasian operations. Although LRA is considered to be primarily a strategic attack force, many of the missions performed by LRA medium bombers would directly support Front operations. These aircraft could conduct reconnaissance missions throughout the areas of interest to the Front and could attack with nuclear, chemical, or conventional weapons. For targets in the immediate battlefield area, fighter-bomber aircraft have been given an increasingly important role, particularly since the development of tactical nuclear weapons small enough to be carried on the aircraft.

The increased role of fighter-bombers and medium bombers has been reflected in a sharp reduction in the number of light bombers assigned to Front aviation. The present light bomber force of 360 aircraft is only about one-sixth of the pre-1960 level. In addition, only a limited number of the older bombers have been replaced in the re-equipment program.

In contrast to the decline in light bombers, the number of aircraft assigned to ground attack regiments has nearly doubled since initiation of the modernization program in 1960. The increased emphasis on fighter-bombers results primarily from the rapidity of movement characterizing the modern battlefield, and the greater flexibility of such aircraft in this environment. In addition to providing close support for ground operations, fighter-bombers can carry out interdiction and neutralization strikes at relatively short ranges. The development of small nuclear weapons has given fighter-bombers a destructive capability previously limited to bomber aircraft. Soviet fighter-bombers have low payload capabilities, however, and would have relatively limited effectiveness with conventional bombs.

Air superiority and air defense of the combat area continue to be important missions of Front aviation. The operational methods for these missions were revised in the 1950's, however. Independent operations by fighter aircraft to rout enemy air groupings were deemed obsolete, as was the concept of protecting ground operations with an umbrella of fighter aircraft. Such tactics had been made ineffective, according to Soviet military doctrine, by the number and variety of the enemy's means of air attack, both aircraft and missiles.

Air superiority is now to be achieved primarily through strikes at enemy airfields executed by both aircraft and tactical missiles. In addition, part of the air defense of the immediate battlefield area and rear positions is now provided by surface-to-air missiles. Theater air defense still depends primarily on fighter aircraft, however, with increased emphasis on intercepting enemy strike aircraft forward of the battlefield area.

These revised operational theories led to a reduction in the number of fighter aircraft deployed with TAF air defense regiments. Unlike the case of

light bomber aircraft, however, the reduction in the number of fighters was accompanied by increased deliveries of new aircraft.

The Soviets have stressed the development of mobile TAF units which can operate from dispersed, hastily equipped airfields. Soviet doctrine calls for the air forces of a Front to disperse to predesignated alternative fields at the first sign of hostilities to thwart enemy efforts toward air superiority through attacks on the main tactical air bases. After the enemy's initial attack has been repulsed, the air units are to move forward with the advancing ground forces. A significant portion of the communications, radar, and maintenance equipment is van mounted, enabling the entire force to be relocated quickly. A major part of Soviet training is devoted to dispersal and mobility exercises, and units in the major air armies have demonstrated considerable proficiency in this activity.

A recent development in Soviet operational procedures has been the introduction of extensive passive air defense measures at air bases. Since mid-1967 revetting, dispersal, and camouflaging practices have appeared at most Soviet airfields. Most recently, the Soviets have begun erecting prefabricated concrete-arch aircraft shelters. In addition to the passive defense measures, increasing use of both SA-3 missiles and antiaircraft artillery batteries is evident at many airfields.

The increase in air defense measures at Soviet airfields represents a marked change from the earlier practice of lining up aircraft in parking areas for operational convenience. The defensive measures begun at this time were partly motivated by the policies of the new defense minister, Marshal Grechko, who has long been critical of earlier "lack of preparedness." It is clear, however, that the lessons of the recent Middle East crisis have provided impetus for the program.

5. Capabilities

The new-generation aircraft delivered to air units in the re-equipment program were designed in the 1950's and reflect the revised concepts of the tasks of Front aviation. With the decline in impor-

tance of the TAF bomber, the emphasis has been on interceptor and ground attack aircraft. The continued importance of air defense as a task of Front aviation is reflected by the fact that two-thirds of the new-generation aircraft in the force are all-weather MIG-21 Fishbeds. Most of the other new aircraft are SU-7 fighter-bombers assigned to ground attack units.

a. Air Defense

Nearly all regiments having a primary mission of air defense are now equipped with Mach 2.0 MIG-21 Fishbed interceptors. The extensive deployment of these aircraft provides the Soviet TAF with a good air defense capability at medium and high altitudes (3,000 to 70,000 feet) under all weather conditions. The MIG-21's are highly maneuverable and are armed with heat-seeking or radar-guided air-to-air missiles (AAM's).

The air defense capability continues to be weak at low altitudes. The best low-altitude interceptor is the YAK-28P Firebar, which can perform intercepts down to about 1,000 feet. Only 24 of these are currently deployed with Front aviation, however, and since the aircraft no longer is being produced, no further deployment with tactical air units is expected.

The ground attack regiments have a secondary mission of air defense. The SU-7 Fitter and MIG-17 Fresco aircraft assigned to these regiments have no airborne intercept (AI) radar, however, and have never been observed with AAM's. This would restrict them to attacks under visual conditions with guns and unguided rockets.

The MIG-21 Fishbed was designed in accordance with the Soviet tactical concept of a mobile fighter force capable of operation from dispersed, hastily prepared airfields in or near the battlefield area. The aircraft may be operated effectively from sod or other natural-surface runways. In addition, the design of the MIG-21 permits quick maintenance, refueling, and rearming, thus reducing the time and equipment needed to service the aircraft between missions.

Continued efforts to improve the flexibility of the fighter force have been reflected in recent modifications to the MIG-21. Since about mid-1965, modifications have been incorporated in new MIG-21 Fishbeds which give them improved capabilities for operating from short runways. At least 370 of the MIG-21's in Front aviation have these modifications.

In developing a light, mobile fighter, some range and payload capability has been sacrificed. These factors limit the ability of the fighters to remain on station As was noted earlier, however, continuous air cover no longer is a mission of Soviet tactical fighters, except in certain critical offensive operations such as river crossings and airborne assaults.

Normally, air cover consists of a few small patrols, with the majority of the fighters on ground alert.

b. Ground Attack

The primary new-generation ground attack aircraft in Front aviation is the SU-7 Fitter. These Mach 2.0 aircraft are armed with guns and carry externally mounted rockets and bombs. The maximum payload of the SU-7 is four 1,100-pound bombs, but the aircraft would have an extremely short range--approximately 270 miles--when carrying this load. Under these conditions, the SU-7 would be operationally limited primarily to preplanned strikes, thus surrendering much of the flexibility typical of aircraft operations. With rockets, or up to 2,000 pounds of bombs, however, the aircraft has a combat radius of about 350 miles.

The SU-7 can deliver a nuclear weapon using a toss bombing technique. Facilities suspected to be for the storage of nuclear weapons have been constructed at SU-7 bases with the Soviet forces in Eastern Europe.

The MIG-17 Fresco fighters--in service with a little over half the ground attack regiments--are old. Production of these subsonic aircraft ceased in 1957 and their range and payload are less than half those of the SU-7.

MIG-21-equipped tactical air defense units have a secondary mission of ground attack. The effectiveness of the aircraft in this role is limited by small payload and short mission time capability. Recent evidence has indicated continued interest in the ground attack capabilities of the MIG-21 Fishbed, however, and it would clearly be employed in this role if the situation required.

MIG-21's equipped with a new type of gun pod have been noted The armament of the MIG-21 in a ground attack role usually consists of rockets and guns, or two 500- to 750-pound bombs. The aircraft can theoretically carry three 1,100-pound bombs, but this would result in a greatly reduced range.

Soviet appreciation for the tactical employment of armed helicopters appears to be growing. Transport helicopters have long heen equipped with a flexible machine gun for suppressing ground fire while landing troops. In addition, the MI-4 Hound has been observed firing rockets as long ago as the late 1950's or 1960's and is reported to have test-fired cannons on flexible mounts in that period as well.

Now there are indications of an increasing awareness of the need to provide more firepower against a greater variety of targets in support of ground operations. There is no evidence that the Soviets have any specially equipped gunships such as

those the United States uses in Vietnam, but they have made at least one attempt to increase the firepower of transport helicopters. This was revealed early in 1968 in a Soviet television film which showed soldiers firing individual weapons on special mounts from helicopters in flight.

Soviet interest in the role of armed helicopters is suggested by various articles on the subject and by a Soviet movie seen recently which showed a MI-4 firing an antitank guided missile (ATGM) at a stationary tank target. This system is believed to be still in a developmental stage, although there may be a limited number in operational service.

c. Tactical Strike

Front aviation has a limited tactical strike capability. Only 170 new-generation YAK-28 Brewer light jet bombers are in service. Over half the light bomber regiments remain equipped with IL-28 Beagle aircraft, most of which entered service over 15 years ago. SU-7 Fitter fighter-bombers can perform tactical strike missions, but in addition to the problem of limited payload and range, the fighter-bombers do not have radar-bombing equipment and are limited to visual bombing tactics.

Brewers carry up to 3,300 pounds of conventional or nuclear ordnance internally, and can deliver these at supersonic speeds. All operational variants of these light bombers have a blind-bombing capability.

The aging subsonic Beagle bombers have greater range and payload capabilities than the Brewer. Owing to their long service life, however, these aircraft face increasing operational limitations, and developments in NATO air defense capabilities have increased their vulnerability.

The Brewer was designed to meet the revised Soviet requirement for a small fast force for attacking enemy airfields, missile sites, and mobile targets in the rear of the battlefield area. A sig-

nificant portion of the training time of Brewer regiments is devoted to navigation exercises. The payload of the Brewer reflects the Soviet belief that development of nuclear weapons eliminated the need for large bomb loads.

The limited strike capability of Front aviation is supplemented by the LRA medium bomber force. The current LRA force includes about 600 TU-16 Badger and 150 to 160 TU-22 Blinder medium bombers. Most of the TU-16's and all of the TU-22's are believed to be oriented to Eurasian missions which would directly or indirectly support Front operations.

LRA medium bombers directly engaged in support of Front operations would perform missions similar to those of the light bomber force. The main distinction between the missions of the two forces would be in the depth of the strikes behind the battlefield area.

Both Badgers and Blinders can carry up to 20,000 pounds of conventional or nuclear weapons, and many are equipped to launch air-to-surface missiles. The bombers have enough range for strikes throughout the area of interest of the Front, even when operating from their home bases and using low-level tactics to avoid enemy defenses.

d. Reconnaissance

All major TAA's have at least one reconnaissance unit, usually the equivalent of a regiment. These units have the dual responsibility of intelligence collection and armed reconnaissance. In the armed reconnaissance concept, the Soviets stress the importance of attacking targets of opportunity. Additional reconnaissance support for Front operations could be provided by LRA medium bombers.

Continuing concern for tactical battlefield reconnaissance has been reflected in recent years by deployment of high-performance aircraft in this role. Since late 1966, extensively modified MIG-21 Fishbeds have been assigned to reconnaissance units. Recently

it has been discovered that a reconnaissance variant of the YAK-28--the Maestro--has been operational with Front aviation for several years. These high-performance Fishbeds and Maestros account for about half of the tactical reconnaissance force. The balance is composed of IL-28 reconnaissance aircraft and a few MIG-17 and YAK-27 aircraft.

Deliveries of the MIG-21 reconnaissance version, designated Fishbed H, began in late 1966. Since then they have replaced nearly all the older model fighters assigned to this mission. Reconnaissance equipment on the Fishbed H is carried in a large pod attached to the underside of the fuselage.

Deployment of MIG-21 Fishbed H fighters reflects continued emphasis on armed reconnaissance. In addition to having more extensive reconnaissance equipment than the MIG-15/17 fighters which it replaced, the Fishbed H extends the speed, range, and firepower of fighter reconnaissance units. It can be armed with AAM's, unguided rockets, bombs, or even a gun pod, Additional pylon stations for external fuel have been added, permitting the aircraft to carry both armament and reconnaissance equipment while retaining the normal combat radius of a MIG-21 interceptor.

Deployment of the YAK-28 Maestro was part of the overall modernization program implemented in the early 1960's, although this has been confirmed only recently. The Maestro has been detected at all five bases which were thought to have been equipped only with the older subsonic YAK-27. Of 140 YAK-27 aircraft previously estimated in tactical reconnaissance units, 120 actually are the YAK-28. These aircraft probably retain their bombing systems, providing an effective strike-reconnaissance capability.

6. Current Production Programs

The modernization programs initiated in the early 1960's, which have determined the present composition of Front aviation, are in the final stages. Deliveries of high-performance aircraft to fighter, ground attack, and light bomber regiments during the past year were at the lowest level since 1961. The YAK-28 Brewer light bomber was phased out of production by mid-1966, and deployment of this aircraft has remained unchanged for nearly two years.

The requirement for MIG-21 Fishbed fighters in Front aviation has been nearly fulfilled. The Fishbed H reconnaissance fighter represents the final phase in the production of MIG-21 fighters for Front aviation, and the aircraft is phasing out of production.

Evidence concerning the status of the SU-7 Fitter program is conflicting. Activity at the production facility, Komsomol'sk Airframe Plant 126, indicates that over 400 of these fighter-bombers have been produced in the past two and a half years. During this same period, however, deliveries to operational units have been low--only about 75 aircraft. The SU-7 is deployed only with about half of the ground attack regiments.

The majority of new SU-7 aircraft traced to a final destination have been exported, both to Eastern European air forces and outside the Warsaw Pact area. Present export commitments will absorb most of the 1968 output. Since the SU-7 is produced at only one facility, it is unlikely that the Soviets would have committed as much of the current production for export if they intended to retain many of the new aircraft for their own forces.

7. Future Trends

a. Mid-1968 Through Mid-1970

The near-completion of current programs marks the beginning of a new transitional phase for Soviet tactical aviation. Little change is expected in the composition and capabilities of the

force through mid-1970. Although some additional MIG-21 and SU-7 aircraft may be delivered, both are expected to reach peak deployment in this period at a level not signficantly greater than the present. An increase in the overall force level is expected to occur during this period as a result of a continuing buildup of forces on the Sino-Soviet border. In addition, deployment of Soviet aircraft to Czechoslovakia may cause an increase in the force level. Soviet fighters drawn from air defense units have been stationed at airfields in Czechoslovakia. If these aircraft remain at their present locations for a prolonged period, they will be subordinated to a TAF command. Further additions near the end of this period are expected with the introduction of the first of a series of new-generation tactical aircraft, currently in developmental testing.

New aircraft entering service with Front aviation in the early 1970's are expected to reflect current Soviet thinking as to the role of aircraft in support of ground operations. Although most of the earlier concepts underlying the force are still held, there are indications of some revision of Soviet military theories, accompanied by shifting emphasis among the tasks of tactical aviation.

One of the most significant recent developments is a growing acceptance within the Soviet leadership of the possibility of nonnuclear conflict. In addition, tactical strike operations and aerial reconnaissance are viewed as increasingly important in a modern war, whether nuclear or nonnuclear. These developments are expected to influence the deployment of new aircraft beginning about 1970.

The increased mobility and depth of action characterizing a modern ground war have led Soviet military planners to stress the importance of tactical strike operations. Lectures and articles have emphasized that in modern warfare the fluidity and sharp changes in the situation bring about a great number of moving targets which are best attacked by aircraft. These same factors result in increased importance of tactical battlefield reconnaissance. A recent article in a Soviet military journal specified

the need for improved means of aerial intelligence collection, such as television and side-looking radar. The article also expressed a need for faster transmission of data. Considerable discussion was devoted to the use of advanced reconnaissance aircraft together with strike aircraft in search and destroy operations.

The increased discussion of tactical strike operations has taken place at the same time that the YAK-28 light bomber has been phased out of production, and when deliveries of new fighter-bombers have decreased sharply. This suggests that a new aircraft is under development to meet the Soviet requirement.

The fact that obsolescent IL-28 bombers remain in service with first-line units indicates that the Soviets continue to have a strike aircraft requirement that is not met by any of the current-generation aircraft. The vulnerability of the IL-28 creates a need for a new aircraft in this role. In addition, the small payload of the YAK-28 becomes a significant weakness in view of the growing Soviet appreciation for nonnuclear contingencies.

The Foxbat, a new twin-jet Mikoyan-designed aircraft, is the only aircraft known to be under development which has significant potential in a tactical strike role. All of the others being tested are inferior to the Foxbat in range or payload, or both. The others are also in a much earlier stage of development and could not become operational until 1971 at the earliest.

The Foxbat is believed to have been designed as a multipurpose combat aircraft. At the 1967 Moscow air show, where the Foxbat was first publicly displayed, the Soviet commentator described it as capable of performing as an interceptor, a strike aircraft, and a reconnaissance aircraft. The airframe is suitable for equipment with a wide variety of weapons and reconnaissance systems. With externally carried nuclear weapons, the Foxbat can cruise at speeds near Mach 3.0 at high altitudes, yet it retains the capabil-

The Foxbat would be particularly effective in delivering nuclear weapons to targets in the enemy rear. Its ability to cruise at Mach 3.0 with internal weapons at high altitude would enable it to penetrate NATO air defenses.

A reconnaissance version of the Foxbat probably would perform its reconnaissance flights at altitudes as high as 70,000 feet at speeds of about Mach 3.0. For this mission systems for electronic countermeasures probably will replace armament.

A version of the SU-7 Fitter with variable geometry (VG) wings, the Fitter B, also is being tested in the USSR. This aircraft is believed to be purely experimental, and it is not expected to enter operational service. However, wing modification, together with some modifications which have been detected on the wing-control surfaces, provides certain advantages which could possibly lead to some deployment of the aircraft. The Fitter B would have the basic attack capabilities of the standard SU-7, while being able to operate from shorter runways. It would also have a greater combat radius, and could remain on station longer for "on call" ground support missions, and the Soviets might elect to replace the MIG-17's remaining in ground attack regiments with Fitter B's.

b. Force Trends Through Mid-1968

Soviet emphasis on mobility and flexibility will continue to influence the deployment of new aircraft in the early 1970's. These concepts are reflected in the current testing of VG aircraft and aircraft equipped for vertical or short take-off and landing (V/STOL). The extensive Soviet testing in this field clearly indicates an intention to deploy such aircraft operationally. Nearly all of these developmental aircraft entered testing within the last two years, however, and none is expected in service until after 1971.

The most promising design is the Flogger, a relatively light single-jet VG fighter. This aircraft performed its initial flight in mid-1967,

and the program has been proceeding rapidly. The Flogger has demonstrated the capability to fly a supersonic speeds at very low altitudes while its maximum speed at high altitudes is estimated to be about Mach 2.3. It also has good STOL capabilities, and could operate from airfields less than 2,000 feet long. An operational variant would be primarily equipped for an interceptor role, although it would have a secondary ground attack capability.

The Flogger meets the Soviet criteria for a mobile, flexible force of fighter aircraft. In addition to its STOL capabilities, the VG concept would provide the aircraft with an acceptable combat radius. The Flogger could also remain on station, cruising subsonically, yet able to engage quickly in supersonic pursuit. This aircraft is expected to enter service as a tactical fighter in the 1971-72 period.

In addition, it is expected that a new aircraft with significantly improved capabilities in the ground attack role will be deployed in the early 1970's. Recent evidence suggests that the Soviets do not intend to continue replacing MIG-17 fighters with the SU-7. In view of the growing Soviet emphasis on ground attack operations, however, it is unlikely that the number of aircraft assigned to ground attack units will be reduced. It is equally unlikely that the Soviets plan to rely on the MIG-17 for a major portion of their ground attack capability through the mid-1970's.

The Flogger could be deployed in both the fighter and ground attack roles, but in its present size and configuration it may have difficulty carrying a sufficient payload for ground attack missions. A separate aircraft is believed more likely, probably incorporating STOL capabilities.

Several other V/STOL aircraft are being tested, all of which employ some form of engine thrust to achieve V/STOL capability. None of these designs appears to be successful, however, and none is expected to enter operational service. The only

true V/STOL fighter in this group is the Freehand, which has movable exhausts to provide a vertical flight capability. In its present configuration, the Freehand would have limited combat capabilities, and it is believed to be purely experimental. Two other aircraft being tested have auxiliary engines to provide extra lift needed for STOL performance. One of these, the Faithless, is a completely new design, while the other, the Flagon B, is a modification of an interceptor currently deployed with IAPVO. The Faithless appears to be the better of the two aircraft, but neither has better STOL performance than the Flogger, and both lack the range and flexibility of the VG aircraft. As a result, neither the Faithless nor the modified Flagon is expected to be deployed operationally. Recent evidence suggests that testing of another new V/STOL aircraft has begun, indicating continued efforts to develop such an aircraft for operational use.

As shown in the tabulation below, the total number of combat aircraft in tactical aviation is expected to undergo little change between mid-1969 and mid-1970, after a slight increase resulting from the Sino-Soviet border buildup anticipated for the 1968-69 period.

	Aircraft Inventory		
	1 Oct 68	Mid-1969*	Mid-1970*
MIG-17 Fresco	700	750-675	750-650
MIG-19 Farmer	65	75-50	50-25
MIG-21 Fishbed	1,450	1,425-1,550	1,425-1,600
YAK-28 Firebar	25	25-35	25-35
SU-7 Fitter	490	475-550	500-600
Foxbat	0	0	0-25
IL-28 Beagle	450	475-450	475-425
YAK-28 Brewer	170	150-180	150-180
YAK-27/28 Mangrove/ Maestro	150	125-160	125-160
Total	3,500	3,500-3,650	3,500-3,700

**Data plotted in Figure 7 (page 57) represent the mid-points of these estimated ranges.*

The new-generation fighter aircraft will not enter service in significant numbers until the 1970's, causing the older aircraft to remain in service for a longer time and in greater numbers than previously expected.

The trend toward a flexible response posture will tend to prevent any major reduction in tactical aviation for several years. In addition, the number of tactical air units in the Sino-Soviet border areas may continue to grow, counteracting any reduction in the first few years of new aircraft deployment.

Some gradual decline in the force may begin in the mid-1970's. At least two advanced aircraft will have entered service by this time, and the older model fighters and light bombers probably will begin to be phased out more rapidly. The newest of the MIG-17/19 fighters and IL-28 bombers will be nearly 20 years old by this time. The force buildup in the Sino-Soviet border areas is expected to be stabilized by then. The overall capabilities of Soviet tactical aviation will be improved, however, as a result of the improved capabilities of the advanced aircraft.

8. Eastern European National Air Forces

a. Present Role

The role of the Eastern European forces is primarily defensive. Czechoslovakia and Poland are the only Eastern European countries of the Warsaw Pact that have any effective capability in a ground attack role. In Warsaw Pact exercises, the Soviets have provided most of the attacking forces, including bombers and troop carriers.

For air defense purposes, each country is a centrally controlled district within the Warsaw Pact air defense system.

together with the increasing number of operational MIG-21 Fishbed D/F's in these units, will increase their all-weather capability.

b. Future Role

The East German Air Force, which has about 300 MIG-21 Fishbeds, will probably remain exclusively an air defense force. The defensive capabilities are being improved by the development of three new airfields, at least one of which is west of Berlin. This is a departure from the past practice of basing all East German aircraft east of Berlin.

Rumania and Bulgaria will continue to have an almost entirely defensive role in the Warsaw Pact. Rumania has moved politically away from the other Warsaw Pact nations but, since its role is defensive in nature, it is expected to carry out its commitments to the Pact.

The Hungarian Air Force has always maintained a defensive role but recent evidence shows that it now has 15 Fitter ground attack aircraft.

c. Capabilities

(1) Present Capabilities

(a) Interceptors

While East Germany has more all-weather interceptor aircraft than the other Pact countries--about 270 Fishbed D and F models--both Czechoslovakia and Poland probably have a more efficient intercept capability. East Germany received most of its all-weather Fishbeds after mid-1966, while those in Poland and Czechoslovakia were received earlier, giving them time to develop better combat readiness. It also appears that the East German Air Force is undergoing a reorganization that would delay development of combat proficiency with the new aircraft.

Operational training in all Warsaw Pact air forces is patterned after the Soviet system. The greatest deficiency is the lack of adequate flying time. The average pilot is believed to log only about ten hours' flying time each month. For Rumania, the average is only about six to eight hours per month.

Table 3

Estimated Numbers of Eastern European Tactical Aircraft
1 October 1968

	MIG-15 Fagot/ MIG-17 Fresco	MIG-19 Farmer	MIG-21 Fishbed C/E	MIG-21 Fishbed D/F	SU-7 Fitter	IL-28 Beagle	YAK-27 Mangrove/ L-29 Maya	Total
Bulgaria	190	75	10	25		10		310
Czechoslovakia	240	65	65	115	85 a/	20	20	610
East Germany	115	15	40	200 b/				370
Hungary	40	10	60	45	15			170
Poland c/	670	15	20	130	20	65		920
Rumania	130	30	40	45		10		255
Total	1,385	210	235	560	120	105	20	2,635

a. About 30 additional Fitter aircraft are believed to have been delivered to Czechoslovakia, but they have not yet been identified in operational units.
b. About 70 additional Fishbed D/F aircraft are believed to have been delivered to East Germany, but they have not yet been identified in operational units.
c. Includes the Naval Air Force.

TOP SECRET

Most of Rumania's and Bulgaria's interceptors are old Frescos and Farmers. Until these are replaced with new high-performance fighters, including a substantial number of all-weather types, these air forces can only be effective in daylight and conditions of good visibility.

Although Hungary's air force is small, it has a high percentage of modern fighters. There are over 100 Fishbeds in the operational force, representing 70 percent of the total.

See Table 3, opposite page, for the present number and types of aircraft in each Eastern European country.

(b) Ground Support

While all Warsaw Pact pilots receive some training in ground attack, the only country with a modern ground attack capability is Czechoslovakia which has about 115 SU-7 Fitters plus about 150 Frescos, which are also used in a ground support role.

Poland has about 200 aircraft assigned to ground support, but only 20 of them are SU-7's--the rest are obsolescent MIG-15 Fagots and MIG-17 Frescos. Presumably these would move with the Front in support of the ground forces.

The only other country with a ground attack capability is Bulgaria, with about 80 Fagot/Frescos assigned to a ground attack role.

(c) Light Bombers

The only Warsaw Pact air force with an operational light bomber force is Poland. This force consists of about 65 obsolescent IL-28

Beagle light bombers, some of which may have been converted to a reconnaissance role. These planes would probably be ineffective against NATO defenses.

(d) Airlift

None of the Warsaw Pact air forces now has a suitable airlift capability. They have been dependent on the Soviets for any airlift capability except for a few light transports and helicopters.

Poland has now acquired four AN-12 Cub transports and Czechoslovakia is reported to have two, but this has not been confirmed.

(e) Airfield Construction

Except for three airfields in East Germany that are being constructed, there is no known new airfield construction in the Warsaw Pact countries. In fact, one and possibly two airfields are being shut down in Czechoslovakia.

(2) Future Prospects

The number of aircraft in the Eastern European Warsaw Pact countries is expected to decrease slightly from the approximately 2,600 aircraft presently on hand. The capabilities could increase, however, with delivery of more Fishbed D/F and Fitter aircraft.

The following tabulation shows the estimated force levels of the Warsaw Pact for the 1968-70 period, by type of aircraft:

	Aircraft Inventory		
	1 Oct 68	Mid-1969	Mid-1970
MIG-15 Fagot/ MIG-17 Fresco	1,385	1,100-1,200	1,000-1,145
MIG-19 Farmer	210	175-200	150-175
MIG-21 Fishbed C/E	235	230-250	230-250
MIG-21 Fishbed D/F	560	620-720	650-800
SU-7 Fitter	120	160-190	180-210
IL-28 Beagle	105	95-100	70-90
YAK-27 Mangrove/ L-29 Maya	20	20-40	20-30
Total	2,635	2,400-2,700	2,300-2,700

The East German Air Force will probably continue to have a strictly interceptor role, expanding its force to from six to eight regiments. During the period of this estimate, it will probably become equipped almost exclusively with Fishbed D/F all-weather fighters.

Poland will increase its interceptor capabilities by acquiring more Fishbed D/F's and retiring most of the Fresco and Farmer aircraft. The Polish Air Force will probably increase its ground attack capability by replacing its obsolescent Frescos with Fitters.

Poland, which now has four AN-12 Cub transports, will probably have two squadrons of AN-12's or AN-8 Camps of 12 each, or perhaps a regiment of 36 aircraft, to augment its airlift capabilities. Czechoslovakia reportedly has 2 AN-12's and may receive some AN-12 or AN-8 transports.

Bulgaria and Rumania are not apt to change their basic defensive roles. They will probably receive more Fishbed D/F's to replace their older fighters, but the size and disposition of forces are not likely to change.

With the report of 15 SU-7 Fitters in Hungary, it is possible that the Hungarian Air Force is developing some ground attack capability.

C. Naval Forces

1. Soviet Naval Mission

The Soviet Navy's historic missions--defense against seaborne attack, interdiction of sea lines of communication, and antisubmarine warfare--continue in force. To these missions have been added the responsibilities for assault operations in the local coastal areas in conjunction with air and ground forces and for protection of Soviet interests at sea.

The navy is emphasizing the development of flexible forces capable of projecting sea power beyond the periphery of the USSR. The effects of this policy can be seen not only in the new classes of long-range ships now entering the fleet but in expanded operations and exercises. Regular operations of submarines in the Atlantic and Pacific, and of surface and submarine forces in the Mediterranean, are now being carried out. More recently, the Soviets began to promote their naval power by "show the flag" operations in the Indian Ocean.

Objectives of the new policy include the development of effective forces capable of countering Western naval power and limiting the ability of the West to intervene in "wars of national liberation." While the Soviets are forcefully pursuing these policies, they cannot shift the balance of naval power during the period of this estimate.

Developments of the past year reveal some significant new details about the missions and responsibilities of the navy. The submarine force continues to be the most important element within the navy. Up to now defense against aircraft carriers was the primary mission of the submarine force.

With the appearance of a new class of submarine that most likely was designed specifically for antisubmarine warfare (ASW), it seems clear that the Soviets intend to develop an open-ocean ASW submarine force. The navy has not had such a capability in the past, but with the continuing concern over

Polaris submarines, the Soviets appear to have decided to develop a submarine force that can reduce the effectiveness of US and Western strategic submarines.

The characteristics of the new classes of surface ships and recent conversion programs indicate the Soviets are intent upon developing a surface force capable of long-range extended operations that can defend itself against air, surface, and submarine attack. This force is responsible for conducting ASW operations in local waters, escorting amphibious and supply ships, and providing backup defense against intruding surface forces. The forces are being deployed to more distant locations to provide the combat naval capability and naval presence required by Soviet foreign policy.

The main missions of the Soviet Naval Air Forces (SNAF) are (1) reconnaissance and strike operations against naval surface forces and (2) antisubmarine warfare. Capabilities against US carrier attack forces have been emphasized, but the ASW mission is receiving increased attention. Other missions include minelaying and strikes against land targets such as port facilities.

2. Naval Force Levels and Construction Programs

a. Submarines

The size of the general purpose submarine force has remained stable over the past year at almost 330 submarines. There are currently about 60 operational cruise-missile submarines in the Soviet fleet, more than half of them of the nuclear-powered E class. Attack submarines number about 270, of which 14 to 18 units are nuclear powered. The cruise-missile submarine force will probably remain fairly stable in size for the next several years, the only change being the addition of a few diesel-powered J-class units. Although the composition of the attack submarine force will be changed by additional units of three new classes, the size of this force will decline during the 1970's with the phase-out of older units of the Q and W classes. (See Table 4, next page.)

Table 4

Estimated Soviet General Purpose Submarine Force
Mid-1968 -- Mid-1970

	Mid-1968	Mid-1969	Mid-1970
Cruise Missile	58	60-61	61
Nuclear	33	33	33
E-I	5	5	5
E-II	28	28	28
Diesel	25	27-28	28
J	13	15-16	16
W-Conversion	12	12	12
Attack	266-270	263-267	264-268
Nuclear	14-18	17-21	21-25
N	12-15	12-15	12-15
C	1	2	4
V	1-2	3-4	5-6
Diesel	252	246	243
B	1	2	4
F	45	45	45
Z	20	20	20
R	14	14	14
W a/	157	150	145
Q	15	15	15
Total	324-328	323-328	325-329

a. Includes five W-class units configured as radar picket submarines.

Construction of E-class submarines has ended at the Severodvinsk shipyard and is tapering off, if not in fact terminated, at the Komsomol'sk shipyard in the Far East. Production of J-class diesel-powered cruise-missile submarines at the Gor'kiy shipyard may terminate in 1969 with the completion of the 16th unit.

A major new submarine construction program has been under way for several years. During 1967, three new classes of attack submarines were identified; two of these, the C and V classes, are nuclear powered. They are being produced in the western USSR, the C class at Gor'kiy shipyard and the V class at Leningrad's Admiralty shipyard. C-class production will probably reach an output of four to six submarines a year by the early 1970's, while V-class production at this shipyard will probably remain stable at about two units a year. Production of the two classes almost certainly will continue through the period of the estimate and most likely through 1975.

The third new submarine, designated B class, is being produced at Komsomol'sk. It is 220 feet long and considerably smaller than the new nuclear submarines of the C and V classes. We believe that it uses a nonnuclear propulsion system because of its size and deployment pattern.

The main construction facilities at Sudomekh shipyard in Leningrad have not been used since the cessation of the F-class program a year or two ago. However, recent activity indicates a new construction program may be under way. Small submarine sections observed at Sudomekh suggest that B-class construction may be under way there.

A reasonable output for the two yards would be four to five submarines per year by 1970, with a force level by 1975 of about 25 to 35 units. After 1970, annual production of attack submarines could reach a total of 10 to 15 units, about half of which would be nuclear powered.

b. Surface Forces

The Soviet navy has in active status more than 100 cruisers and destroyers, almost half of which are modern units. About 35 of these units, all equipped with missiles, have been built in the past decade.

Construction of ocean-going combatants --the Kresta-class guided-missile cruiser and the Petya-class escort--is being sustained at the pace of the past several years, while the second unit of the Moskva-class helicopter carrier nears completion. No additional helicopter carriers are under construction, but a follow-on class would incorporate changes dictated by experience with the Moskva class. (See Table 5, opposite page.)

There are indications that two or more Sverdlov-class cruisers may be converted to carry a new long-range SAM system of the type we believe to be fitted in the Moskva-class ships. In addition, several units of the Kotlin and Krupnyy classes of destroyers are being converted to carry the SA-N-1 SAM system.

Production of the Kynda-class guided-missile cruiser (eight surface-to-surface missile launch tubes and one twin SAM launcher) has been terminated and superseded by the Kresta-class guided-missile cruiser (four SSM launch tubes and two twin SAM launchers). The current Krupnyy class conversions involve removal of the SSM launchers and replacement by a SAM system.

The Soviets continue to build other surface ships--escorts, patrol craft, guided-missile patrol boats, minecraft, naval auxiliaries, and amphibious ships at about the same rate as in the past years. Several classes of ships such as the Petya escort, and the Poti, the SO-1, and possibly the Stenka patrol craft continue to improve Soviet short-range ASW defense. The new Alesha class, introduced into service in 1966, may have an ASW function, such as placing and retrieving sonobuoys, in addition to its probable role as minelayer.

Table 5

Estimated Soviet Surface Ship Force
Mid-1968 -- Mid-1970

	Mid-1968	Mid-1969	Mid-1970
Helicopter Carriers	1	2	2
Missile Cruisers	8	11-12	14
Kresta	3	5	7
Kynda	4	4	4
Sverdlov	1	2-3	3
Cruisers	15	13-14	12
Kirov	2	2	1
Sverdlov	11	9-10	9
Chapayev	2	2	2
Missile Destroyers	27-29	31-33	35-37
Kashin	12-14	14-16	16-18
Kanin	1	2	3
Kotlin	3	5	7
Krupnyy	7	6	5
Kildin	4	4	4
Destroyers	73	71	69
Kotlin	24	22	20
Tallinn	1	1	1
Skoryy	48	48	48
Escorts	110	116	122
Riga	48	48	48
Kola	7	7	7
Mirka	18	18	18
Petya	37	43	49
Total	234-236	244-248	254-256

Soviet coastal antiship defense is provided in all fleet areas by guided-missile patrol boats of the Osa and Komar classes. These two classes carry the effective Styx surface-to-surface missile which has a range of about 15 nautical miles.

Traditional Soviet naval interest in mine warfare is being continued with the production of Yurka and Vanya classes of minesweepers. Production of naval auxiliary ships is centered on those kinds of units which are complementary to the Soviet submarine force--Ugra-class tenders and Lama-class missile support ships. Other auxiliaries of a submarine support nature are being constructed to expand and improve the Soviet mobile base concept.

Construction of amphibious ships and craft is continuing. Production of the Polnocnyy class in Poland for the USSR has slowed to about six units per year; there are now about 30 units in the Soviet navy. Construction of the Alligator class is continuing at about two units per year. The Alligator class is the largest Soviet ship in the amphibious category. It may be more suitable as a military transport ship than a landing ship because of its deep draft. There are now four Alligator-class ships in the Soviet fleet. The first unit of a new landing craft designated Vydra, was completed in 1967. About seven units are now in service.

c. Naval Air Forces

(1) Bomber Forces

The SNAF bomber forces consist of about 40 TU-95 Bear heavy reconnaissance aircraft, more than 500 TU-16 Badger and TU-22 Blinder medium bombers and air-to-surface missile (ASM) carriers, and approximately 60 IL-28 Beagle light bombers. There has been relatively little change in these forces during the past year. (See Table 6, opposite page.)

Production of reconnaissance variants of the TU-95 has continued at a rate of about one aircraft per month. The 40 Bears in service by mid-1968, represent an increase of 10 aircraft since mid-1967. Most or all of the TU-95's are believed to be the Bear D model.

Table 6

Estimated Numbers of Combat Aircraft
in Soviet Naval Air Forces
Mid-1968 -- Mid-1970

	Mid-1968	Mid-1969	Mid-1970
TU-95 Bear D	35-40	35-45	35-45
TU-16 Badger A/D/E/F	180-200	170-190	160-180
TU-16 Badger B (AS-5)	60-70	60-70	60-70
TU-16 Badger C (AS-2)	190-215	190-215	180-200
TU-22 Blinder	55-60	55-70	55-95
IL-28 Beagle	50-60	30-60	0-30
BE-6 Madge	50-40	40-25	30-15
BE-12 Mail	30-40	40-60	50-70
IL-? May	0-5	10-15	20-30
MI-6 Hook	10-15	10-20	10-20
MI-4 Hound and Follow-on a/	130-140	125-150	125-150
KA-25 Hormone (Carrier) b/	25-35	60-80	75-100

a. Some MI-4's probably are being replaced by KA-25's, and the deployment of other new ASW helicopters, such as a variant of the MI-8 Hip, is also possible. Totals shown do not include a small number of MI-4's used in a utility role.

b. In previous estimates carrier-based helicopters have been included in the totals for Military Transport Aviation. The indications of an ASW role for these forces now are considered sufficient to justify their inclusion with other SNAF combat aircraft.

The SNAF received about five more TU-22's during the past year and now has approximately 55 to 60 of these aircraft assigned to two regiments. Some of the TU-22's may be equipped with the AS-4 Kitchen ASM, but this cannot be confirmed.

To date, however, neither of the SNAF TU-22 bases has been provided with ASM facilities such as are present at the Long Range Aviation (LRA) bases with TU-22/AS-4 units. In addition, both of the SNAF units have a long history as reconnaissance regiments.

There has been no significant change in the TU-16 force during the past year. The current force consists of about 470 aircraft, including approximately 70 Badger B's equipped with the AS-5 Kelt ASM and about 210 Badger C's equipped with the AS-2 Kipper ASM. These 280 ASM carriers provide the main striking power of the SNAF, which also operates another 190 TU-16's for reconnaissance, aerial refueling, training, and ASW. This total of 190 also includes one regiment of about 25 TU-16's of an unidentified model. This unit was equipped with standard bomber aircraft at one time, but there is some evidence that it may have been converted to the AS-5 missile system.

In addition to the regular TU-16 units assigned to the four fleet air forces, the SNAF also has a reconnaissance squadron of about six TU-16's based in the UAR.

This is the first time a SNAF unit has been based outside the USSR.

The SNAF also has two regiments of IL-28 Beagle light jet bombers--about 60 aircraft --based in the Baltic Sea area where their limited range is not a major drawback. These units perform a variety of reconnaissance and light strike missions, including some participation in ASW operations.

(2) Antisubmarine Forces

A new ASW aircraft which has been under development for several years entered service during 1968. This aircraft, designated the "May," is a variant of the IL-18 Coot turboprop medium transport. Keyhole photography in August 1968 revealed five Mays at a base of the Northern Fleet Air Force, and it is believed that the first deliveries were made earlier in the summer.

The BE-12 Mail turboprop amphibian is being produced at a rate of about two aircraft per month to replace the obsolescent BE-6 Madge piston-engine flying boat. At least 30 and perhaps 40 BE-12's now are in service, while BE-6 strength has declined to 50 aircraft or less. The SNAF also continues to operate about 15 TU-16 medium bombers in the ASW role, and some IL-28 light bombers have been involved in ASW operations in the Baltic.

Three BE-12 amphibians were flown to the UAR in August of this year. This move probably reflects the establishment of a SNAF ASW unit similar to the TU-16 reconnaissance squadron that has been operating from the UAR since April 1968.

The principal aircraft in the helicopter ASW forces is the MI-4 Hound. About 135 of these piston-engine helicopters still are in service, operating from shore bases. During the past year the SNAF began deployment of a new light helicopter, the twin-turbine KA-25 Hormone, for service aboard the Moskva-class helicopter carriers. Some KA-25's also have been delivered to a shore-based MI-4 ASW unit. It is believed that the KA-25 will be used primarily in the ASW role, although other missions cannot be excluded. About 30 KA-25's probably are already in service. Most of these are believed to be destined for service on the helicopter carrier Moskva, which is now undergoing trials in the Black Sea.

(3) Other Forces

The SNAF operates 140 to 150 transport aircraft and helicopters which are used in a utility or command support role. Included in this category are about 10 MI-6 twin-turbine heavy helicopters which are deployed with two of the MI-4 ASW regiments. The mission of the MI-6's has not been positively identified. Their association with the MI-4 units suggests the possibility of an ASW role, but the MI-6's have never been confirmed in ASW activity, and it seems more probable that they have a logistic support role.

3. Operations and Capabilities

Emphasis on expanded and more realistic operations, a trend of the past several years, was the major theme of Soviet naval operations and exercises during the past year. The Soviets are continuing their close surveillance of US naval formations, particularly carrier operations, but monitor other Western exercises as well. There have been occasional incidents of harassment of ships and submarines.

a. Defense Against Enemy Surface Forces

Soviet statements and naval exercises indicate that Soviet planners continue to assign a high priority to the destruction of Western naval surface forces, especially aircraft carriers, in time of war. Over the past decade the Soviet Navy has developed an impressive operational capability to carry out this mission. The main weapons systems employed in this effort have been cruise-missile submarines and ASM-equipped aircraft.

Observation of recent exercises indicates that the Soviets intend to use echeloned barriers in defending against surface attack groups. Nuclear-powered cruise-missile submarines of the E class are deployed into waters several hundred miles off US naval bases, apparently to simulate attacks on carriers shortly after their departure from home bases.

Additional E-class units are deployed on a continuing basis to patrol stations along carrier transit routes in midocean and Soviet naval TU-95 Bear D aircraft perform frequent reconnaissance missions against transiting attack carriers in midocean.

As the carrier task groups or surface combatants near Soviet home waters, reconnaissance missions are performed by naval Badger jet bombers. These sorties are followed by simulated strike missions by ASM-carrying naval bomber aircraft and by simulated cruise-missile attacks from E-class submarines.

The final strike phase against surface task forces would be undertaken by J-class diesel-powered cruise-missile submarines and by missile-equipped cruisers of the Kynda and Kresta classes. The E- and J-class submarines as well as the Kynda- and Kresta-class cruisers are all equipped with the SS-N-3 cruise missile, which has an effective range of about 250 nm.

Submarines and fast patrol craft could also be employed to fire torpedoes and missiles as the surface force approached closer to Soviet home bases. The last line of defense would be the coastal defense missile installations.

(1) Air Forces

The reconnaissance capabilities of the SNAF have improved considerably during the past few years. The most important change has been the deployment of two regiments of TU-95 Bears, while medium bomber reconnaissance elements also have been strengthened. The TU-95's of the Northern and Pacific fleets provide a good capability for long-range reconnaissance in both the Atlantic and Pacific. Formerly, missions beyond the range of the SNAF's medium bombers required the support of LRA's heavy bombers.

The SNAF TU-95 units now operate regularly on reconnaissance missions against US carrier forces, and LRA participation in this type of activity has been substantially reduced.

The combat radius of the TU-95--about 3,500 nm refueled--provides the SNAF with a capability for supporting surface and submarine attacks far at sea.

TU-16 Badger reconnaissance units assigned to the Northern and Pacific fleets provide a medium-range reconnaissance capability to back up the TU-95's. In the Baltic and Black Sea fleet, the primary reconnaissance capability is represented by the two TU-22 Blinder regiments. In addition, the TU-16 unit based in the UAR provides a reconnaissance capability in the Mediterranean. Prior to the formation of this unit, Soviet naval operations in the Mediterranean lacked any form of air support under peacetime conditions.

The ASM-armed TU-16's form the principal striking power of the SNAF. With approximately 70 Badger B's (two AS-5's) and 210 Badger C's (one AS-2) the SNAF has enough TU-16's to carry about 345 ASM's, each with a range of 100 nm or better. In addition, there is the possibility that some SNAF TU-22's are or will be equipped with the high-performance AS-4 missile.

The ASM-armed force was developed mainly for attacking US attack carriers. The combat radius of the ASM-equipped TU-16 is sufficient for the aircraft carriers to be engaged before they are close enough to Soviet territory to launch strike aircraft, if timely reconnaissance information is available. SNAF TU-16 units regularly practice aerial refueling, indicating an intention to engage the carriers as far out as possible, and exercise activity indicates that the SNAF would attack with relatively large numbers of aircraft in an attempt to saturate the carriers' air defenses.

Although aircraft carriers would be the primary target for most ASM-equipped aircraft, other hostile surface forces also would be engaged. Recent information indicates, for example, that a high priority is assigned to the destruction of US command and control ships.

The medium bombers that are not equipped with ASM's are used mainly in the reconnaissance role or as aerial tankers, but most of these aircraft could deliver bombs or torpedoes as a secondary mission. There has been little torpedo dropping activity in recent years, but bombing continues to form part of the training of both TU-16 and TU-22 units. The IL-28 light bombers, based in the Baltic where their limited range is not a drawback, are trained for a variety of reconnaissance and light strike missions, including some participation in ASW operations.

The missions of the medium and light bomber forces include strikes against land targets such as port facilities, and some bombers probably would be employed in this role. The ASM carriers also have a capability for launching missiles against certain land targets, but most ASM's probably would be used in their intended antishipping role.

(2) Submarine Forces

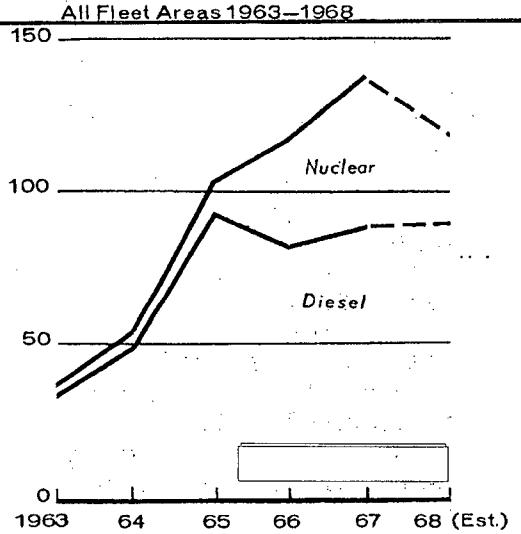
The Soviets increased their out-of-area submarine activity in 1967 but reduced its overall scope in the first half of 1968. Soviet response to the Middle East situation disrupted previous Atlantic patrol patterns and strongly influenced the numbers of deployed units. (See Figure 8, next page.)

Out-of-area activity increased about 20 percent in 1967, with 138 deployments noted, as contrasted with 116 in 1966. However, patrols in the first six months of 1968 totaled less than 40, whereas there had been 90 in the same period in 1967.

Figure 8

Soviet Submarine
Out-of-Area Patrols*

All Fleet Areas 1963–1968



*Does not include interfleet transfers or fleet exercise participants.

A large part of the 1967 increase was in reaction to the June war. The size of the Mediterranean squadron was increased and its submarine component nearly tripled. Nuclear-powered cruise-missile submarines of the E class operated for the first time in the Mediterranean at the time of the crisis. Since June 1967, E-class patrols have been conducted there. The North Atlantic stations patrolled by the E class before the June war appear to have been reduced in order to maintain an E-class submarine in the Mediterranean most of the time.

An N-class nuclear-powered torpedo-attack submarine also reacted to the Arab-Israeli war--probably in a reconnaissance role for the E class. Since this first unit, six others have deployed to the Mediterranean, but there have been large gaps in the N class presence there.

About 80 percent of the Northern Fleet's F-class long-range diesel-powered submarines were deployed to the Mediterranean in 1967. To reduce the strain on this F-class force, the Soviets have deployed more medium-range diesel units (W and R classes) from their western fleets than ever before.

During 1968 they began to double the average length of time on station by making greater use of friendly ports and anchorages for midvoyage logistic support of F-, R-, and W-class submarines.

In spite of the constraint imposed by the Montreux Convention--submarines are prohibited from transiting the Turkish Straits except for movement to and from repair bases--Soviet submarines based in the Black Sea are making patrols in the Mediterranean for as long as two months. This pattern has been followed since 1964, and has been increased in 1968.

The strain on the submarine force in 1967 due to the Mediterranean requirement has contributed largely to the 1968 decline in patrols. Manning level problems may also be a relevant factor, since the manning requirements for new Y-class submarines could be draining trained submariners from the fleets.

In 1967, E class deployments in the Atlantic increased to 10, double the number of patrols in 1966. The Atlantic increase would probably have been even greater without the Middle East crisis, because five E class were diverted to the Mediterranean during 1967. Pacific E class deployments during 1967 reached a figure of eight. None were detected in 1966. We continue to believe that the E class is intended primarily for antiship missions.

For the third consecutive year J-class submarines have not been detected south of the Norwegian Sea or in distant patrols in the Pacific. The lack of long-range patrols and the role of the J's in the last three Norwegian Sea exercises provide a strong indication that these submarines are intended for perimeter defense. One and possibly two J-class units conducted a Mediterranean deployment in 1966, and one of them suffered a mechanical difficulty. These patrols probably will be resumed once operational deficiencies are corrected.

Units of all three new classes of attack submarines have been deployed to operational submarine bases, and out-of-area patrol activity should begin shortly. The two large nuclear-powered classes

are expected to operate in North Atlantic and Pacific patrol areas, while the smaller submarine because of its more limited capabilities is more likely to follow a pattern similar to that of J-class submarines.

The reaction of the Soviet Navy and its submarine force to the Middle East crisis reflects an increasing capability to deploy naval forces in limited war situations. The rapid and prolonged concentration of submarines in the Mediterranean could not have been preplanned as part of a normal training cycle. It was done at the continuing expense of disrupting the operational and overhaul cycle and patrol patterns of Soviet western submarine fleets.

(3) Surface Forces

Soviet naval surface forces have not displayed the extended-range patrol activity that is characteristic of the submarine forces.

By mid-1967, the number of surface ships deployed to the Mediterranean reached a new high of about 40 and the level has since been maintained. Mediterranean units engaged in frequent operations and exercises, often reacting to movements of the US Sixth Fleet.

Units of the Soviet Pacific Fleet reacted to the movement of US ships during the Pueblo crisis. The reaction was relatively easy since Vladivostok headquarters and Soviet naval bases are within one day's steaming distance of the Wonson area.

There is little change in the widespread deployment of intelligence collection

ships, particularly in the vicinity of Polaris submarine bases, or the worldwide deployment of oceanographic research ships.

A Soviet naval surface force conducted a goodwill cruise into the Indian Ocean which involved port visits to eight countries. The cruise, which lasted four months, served to show the flag and clearly indicates Soviet interest in the area.

Surface forces are hampered generally by the small number of units in the fleet with advanced combat capabilities and by their dispersal among fleet areas. The Soviets are forced to retain older and less effective combat units to supplement the new units. Surface forces in the Pacific are the most restricted, because they cannot easily be augmented by units of other fleet areas, as in western USSR.

In the western fleet areas, the Soviets have nearly 150 major surface units available--37 in the Northern Fleet, 54 in the Baltic, and 53 in the Black Sea. Such forces however, have limited antiair and submarine defense capability and would be combat limited also by logistic support. The limitations of the surface forces are mainly the result of higher priorities accorded to submarine forces.

b. Antisubmarine Warfare Forces

The Soviet Navy today has a limited but growing capability to combat enemy submarines. Near Soviet coasts, where the requirement to prevent intrusion by enemy submarines would be most critical, Soviet surface and air patrol craft, fixed defensive systems, and shore-based helicopters can all be brought to bear against a target within a short time after detection. Reaction times, as well as detection, classification, and attack capabilities, are gradually degraded as the distance from coastline increases. At 300 to 400 miles, overall ASW capability becomes poor.

During the past three or four years Soviet naval operations have expanded away from the coasts. This trend will have the effect of extending

the active ASW zone into the open ocean because the fleet will have to defense itself and its logistic train from submarine attack. The new classes of ships, submarines, and aircraft currently being introduced will substantially improve Soviet capabilities for this kind of operation. Ultimately these programs will lead to an improved capability against the Polaris-type submarine. For the present and immediate future, however, Soviet capabilities to detect, localize, and destroy Polaris submarines in the open ocean are extremely limited.

The first significant improvement in anti-Polaris capabilities is expected to occur in the Mediterranean. The Soviets now have a large surface ship and submarine force deployed there with limited but growing antisubmarine warfare capabilities. These ASW forces are believed to be deployed primarily for fleet defense. However, restricted passages in the Mediterranean, particularly the Gibraltar and Sicily straits, offer optimum areas for deployment of new ASW platforms. It is in the Mediterranean that we expect the Soviets to make their first strides in improving their anti-Polaris capability.

Soviet ASW forces have not achieved any apparent breakthroughs in weapons or tactics. However, considerable resources are being allocated to production of ships, submarines, airplanes, helicopters, and weapons designed for antisubmarine warfare. Observation of Soviet naval exercises has indicated more realistic training, the use of capable and modern target submarines, good cooperation between air and surface units, and submarine-versus-submarine torpedo firing exercises.

While the Soviets have long recognized the value of a submarine in combat against another submarine, their attack submarines have not been effective ASW units. During the past year, however, three new classes of attack submarines entered the fleet, and we believe that one of these could be considerably more effective than older classes against Western submarines.

The submarine with the greatest ASW potential is a nuclear-powered unit being built at Gor'kiy and designated C class. Only limited data are available, but indications are

that it has a new weapons system and probably an improved and quieter propulsion system with high speed capability and, most likely, a much improved sonar. In performance, it could be the equal of some US nuclear-powered attack submarines. We estimate the C class probably will be deployed to the Atlantic, the Pacific, and the Mediterranean.

The Kresta-class missile cruisers and Moskva-class helicopter carriers, with their considerable weapons capabilities for engaging surface, air, and submarine targets, will probably form the nucleus of future Soviet naval task forces operating in remote areas. These ships probably will be accompanied by Kashin- and converted Kotlin- and Krupnyy-class missile destroyers. The most likely area for deployment of these forces in the near future is the Mediterranean.

Our assessment that the helicopter carrier has a primary antisubmarine mission has been materially strengthened by the recent operation of this ship in the Mediterranean. The use of Hormone ASW helicopters with their dipping sonar and the presence of bow sonar, variable-depth sonar, ASW rocket launchers, and a probable ASROC-type launcher aboard the ship tend to establish that ASW is the primary role of the Moskva class.

Airborne ASW capabilities are being improved by the deployment of new systems, but the SNAF still lacks the equipment needed for long-range ASW operations. Current programs provide increased support for fleet operations, but SNAF capabilities for defense against the Polaris threat remain extremely limited.

The BE-12 Mail amphibian now entering service is a distinct improvement over the BE-6 Madge flying boat in several respects, but it does not offer any increase in combat radius. In theory, both aircraft could conduct ASW operations at distances up to 1,000 nm or so from their bases; in practice, operations rarely take place more than a couple hundred miles offshore. The advantage of the BE-12 lies in its higher cruising speed (over twice that of the BE-6) and its amphibious capability. The BE-6

is limited to the use of water bases, and most BE-6 units are forced to suspend operations during the winter months.

The new May ASW aircraft has a better combat radius than either the BE-6 or BE-12, and it can carry a heavier payload--some 18,000 lbs as compared with 8,800 lbs for the BE-6 and 10,000 lbs for the BE-12. Information on the operations of these new aircraft is not yet available, but their deployment clearly represents a significant improvement in SNAF ASW capabilities.

The TU-16's used in the ASW role can operate at distances equal to or even greater than either of the seaplanes, but these aircraft are not believed to carry equipment for localizing submarine contacts and therefore cannot conduct independent search and attack operations. The TU-16's relatively high cruising speed enables it to react quickly, however, and it is capable of carrying a good load of ASW weapons.

IL-28 light bombers assigned to the Baltic fleet have been active in ASW training since at least early 1967. Like the TU-16, the IL-28 can carry and monitor sonobuoys, but does not have any known localizing capability.

The force of MI-4 Hound helicopters has a fair to good capability for ASW operations in coastal areas. The limited range of the MI-4, however, precludes its use at distances much over 100 nm from a shore base.

The recent deployment of KA-25 helicopters on the Moskva-class helicopter carriers could significantly improve the ability of the SNAF to provide ASW support to fleet units. It is believed that these aircraft will be used primarily in an ASW role, with about 25 helicopters assigned to each carrier. KA-25's also are expected to be assigned to the Kresta-class guided-missile light cruisers.

The KA-25 will be able to operate at a radius of about 100 nm or so from the carrier, providing a significant airborne ASW capability for

fleet units operating beyond the cover of shore-based aircraft. The SNAF has little experience that is applicable to operations of this kind, however, and it will be some time before the carrier-based force can be used effectively.

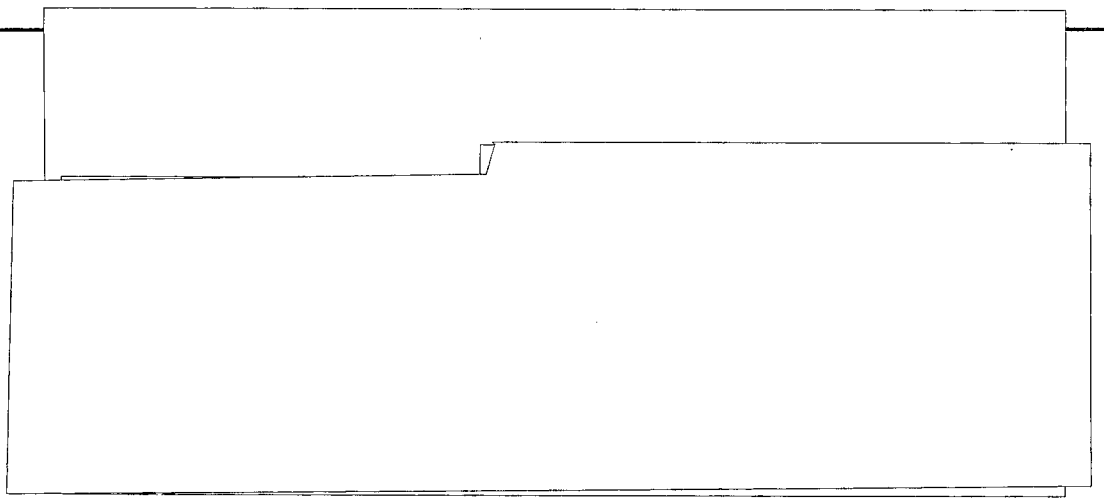
The deployment of a SNAF BE-12 unit to the UAR provides the first airborne ASW support for the Soviet Mediterranean squadron. Even the three aircraft now in the UAR represent a major addition to Soviet ASW forces in this area. The deployment of a few more BE-12's, together with the Moskva-class carrier and its KA-25 ASW helicopters, would substantially increase the ASW capabilities of the Mediterranean squadron.

c. Naval Infantry and Amphibious Forces

The naval infantry has reached a level of about 10,000 men and continues to grow at a slow but steady pace. There are more than 100 landing ships to serve this elite marine force. The force has a capability for a brigade-size landing in each fleet area but no capability for long-range, opposed amphibious operations.

The amphibious ships deployed to the Mediterranean serve to enhance Soviet prestige and influence with the Arabs, one of the main objectives of the Mediterranean squadron

The present group of Soviet amphibious ships in the Mediterranean could transport a small force in an unopposed landing. This limited capability could be increased if the two helicopter carriers could be used in an assault operation, but this is unlikely in view of the small number of troops that could be carried--a company-size force on each carrier. In an opposed situation, these limited amphibious capabilities would be further reduced because of the absence of support forces that would be required.



4. Naval Support Capabilities

a. Afloat Support

The submarine forces generally have been adequately equipped with afloat support equipment to meet operational requirements, and no outstanding deficiencies have been noted. Extensive facilities ashore have been established mainly to support the long-range submarine force with afloat support as a mobile backup to these facilities. Restrictions in submarine operations appear to result mainly from the limits of crew endurance and from the operating characteristics of the submarines themselves.

On the other hand, surface forces have severe operational limitations because of inadequate afloat support. Very little repair or resupply capability is available, placing constraints not only on the size of a force that can be deployed at a distance from the USSR but also on the length of time such a force could maintain a combat capability.

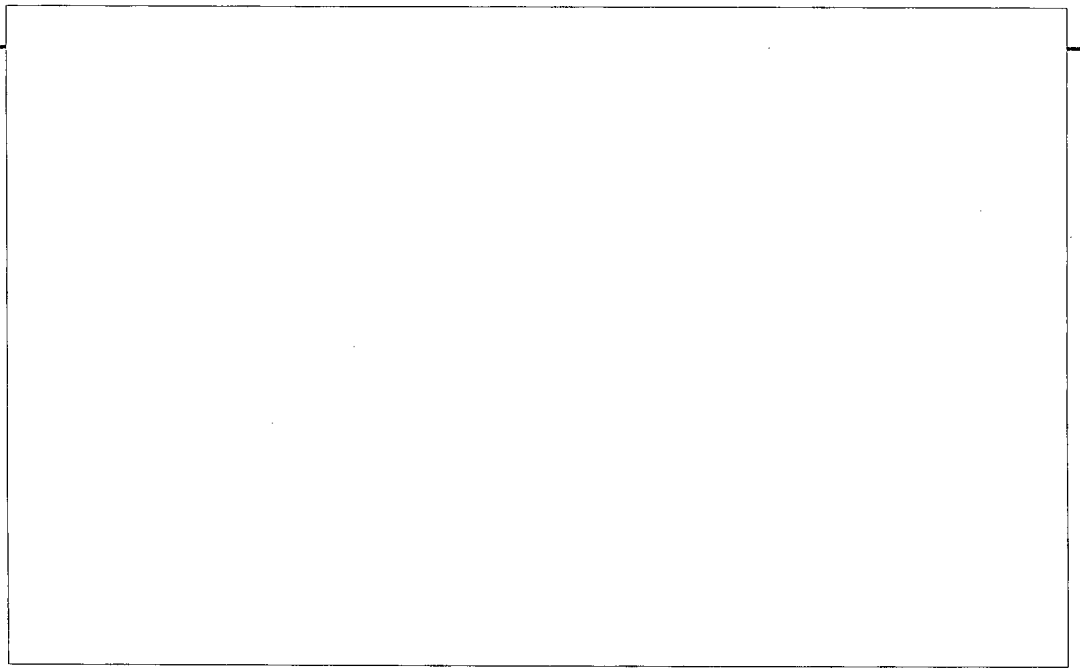
The most impressive single development in afloat support techniques has been the deployment of a group of surface support ships to the Cape Verde and equatorial Atlantic Ocean areas for a period of about six months during 1967. The Atlantic submarine support group consisted of submarine tenders, a missile support ship, an intelligence collector, a hydrographic vessel, a tanker,

and an oiler. This force supported Soviet submarines of the E and F classes and possibly an N-class unit. Northern fleet submarines were observed in company with this group on six occasions. One E-II-class submarine was deployed with the group during its entire six-month deployment.

This logistic support experiment was probably a feasibility test. If adopted operationally, this type of support would extend the deployments of out-of-area submarines and reduce the time involved in transit from home bases.

Out-of-area afloat support has been provided to the Mediterranean squadron by submarine tenders, oilers, water carriers, and repair and rescue ships. These ships have usually operated from the fleet anchorages established throughout the Mediterranean and Arab ports. Merchant fleet tankers have delivered oil to the Port Said naval oil storage depot and directly to fleet units.

Some improvement in logistic support operations--such as the limited adoption of the alongside refueling technique used by Western navies--has been observed during the past year or so, but in general the effectiveness of the Soviet naval rear service has improved slowly and it lags the US in underway replenishment techniques.



c. Sealift

The Soviet maritime fleet encompasses a growing reserve of ships that could be available for sealift operations. Of the total fleet of about 10.5 million deadweight tons, some 350 ships are considered suitable for sealift operations in support of military forces. These selected ships have cranes with at least a 40-ton lift capacity, and more than 125 have large hatches. They provide a maximum capability for transporting about 17 motorized rifle divisions, or about 15 motorized tank divisions, as follows:

Fleet	Approx. No. of MRD's That Could Be Sealifted
Baltic	5.0
Black	7.0
Northern	1.5
Pacific	3.5

Actual transport capacity normally would be considerably less than maximum for several reasons. The distribution of ships is widely spread among the various fleet areas, but about two-thirds are in the Baltic and Black seas. Because of the

normal peacetime use of ships in civilian trade, many would be unavailable on short notice. It is estimated that about 25 percent of the total number of ships in each fleet area are at sea or otherwise unavailable at any given time.

Moreover, sealift operations would require the use of port facilities and in most cases would also require convoy escort. Only limited convoy defense exercises have been noted, in the Northern and Black Sea fleet areas in 1966 and again in the Northern Fleet in 1968, suggesting that sealift operations have a low priority in naval strategy.

5. Eastern European Naval Forces

Warsaw Pact navies of Eastern Europe are making modest increases in their ability to defend their coasts in combination with the Soviet Navy. The gradual increase in capability and readiness results chiefly from intensified combined exercises in the past year and not from new transfers of Soviet weapons.

Pact plans for defense of the Baltic approaches call for a coordinated defense in depth. An aggressor force, detected by picket ships guarding the main channels, would come under successive attacks by East German and Polish aircraft, by East German torpedo and guided-missile craft, and by a similar Soviet surface force operating from Swinoujscie, Poland. Polish guided-missile and torpedo boats would probably be committed next, followed by aircraft and major combatant ships of the Soviet Baltic Fleet.

Warsaw Pact navies have also emphasized efforts to upgrade their antisubmarine defenses in the Baltic in the past year, and Polish submarines have operated in the North and Norwegian seas on an increasing scale.

Poland continues to upgrade its amphibious assault capability. [redacted] brigade strength--about 2,100 troops [redacted] This force will probably double before 1970. All indications point to an increasing amphibious role for

the Polish forces in Warsaw Pact plans, possibly freeing Soviet Baltic Fleet amphibious forces for tasks elsewhere. The Soviets will probably withdraw from Swinoujscie in 1970, and Polish naval strength is likely to grow to fill this gap.

Eastern European naval strength is concentrated in the Baltic and is very low in the Black Sea, where the Soviet Navy carries the main responsibility for defense. The navies of Bulgaria and Rumania are structured for the patrol and minesweeping functions of their coastal defense mission. In the past year, the small Rumanian Navy has engaged in closer cooperation with its allies than in any year since 1964, while the level of training and operations in the Bulgarian Navy declined last year.

Only a few ships were added to the fleets in the past year. There were no important deliveries of Soviet ships. Polish yards produced medium landing ships, small subchasers, torpedo boats, and fleet minesweepers. Production of the Krogulec-class fleet minesweepers probably ended in 1967. Poland kept over half of the 13 Polnocny-class landing ships completed in 1967. This was the first year of production in which the USSR did not receive most of the new Polnocnys. East Germany produced subchasers

and torpedo boats, and the first unit of the East German built Kondor-class medium minesweeper was completed in 1967. East Germany has also built subchasers and torpedo boats, but these programs have probably ended.

The only non-Soviet Warsaw Pact naval air arm consists of about 65 obsolescent IL-28 Beagle light bombers based in Poland. These aircraft have a limited capability for reconnaissance and light strike operations in the Baltic in support of Warsaw Pact naval forces.

6. Future Developments

a. Submarines

Force levels and capability of the nuclear submarine force will be markedly improved by the programs now under way--the result of decisions reached in the early 1960's on production of new classes of attack and ballistic-missile submarines and their force levels. Although the highest priority has been assigned the ballistic-missile program, production priority for the attack submarines is almost as high. In view of the heavy investment being made in submarine-producing shipyards, the Soviets clearly intend to continue this emphasis on submarine forces into the future.

We believe that the new Gor'kiy-built nuclear-powered attack submarine, designated C class, is designed for surveillance duty against the Western Polaris submarine fleet. Because of the size of the Polaris force and the location of Soviet submarine bases, we estimate that 50 to 70 submarines will be required to fulfill this task.

The other new nuclear-powered attack submarine, the V class, appears to be a successor to the N class. It probably will be used for reconnaissance duty and for antishipping attacks. Both of these tasks would be carried out on the high seas away from Soviet peripheral waters. The present construction rate at Leningrad indicates that the Soviets will probably have a force of about 15 V-class submarines by 1974.

The B class appears to be a follow-on program to the F-class long-range diesel-powered attack submarine. This submarine will replace the obsolete W and Z classes of attack submarine and will augment the more recently constructed F-class force. Production of the B class, which is expected to commence soon in the western USSR, may reach a final production total of 45 to 50 units in the late 1970's, matching the strength of the current F-class force. Even with an output of about 50 B-class units, the diesel-powered attack submarine force is expected to decline from the current figure of about 250 to about 100 in the mid-1970's.

Probably the greatest uncertainty about the new programs concerns the suitability of the submarine designs for their several tasks. These designs are second generation, but it remains to be demonstrated that sufficient advances have been made over the first generation to warrant sizable programs. Assuming that deficiencies can be overcome through developmental changes during construction and that completely new designs will not emerge, the required fleet strength may be reached by 1980.

On the other hand, should any of the new designs fail to fulfill requirements, a third generation probably would appear in the mid-1970's. Soviet submarine strategists have indicated the need for a support-type submarine, and one or two models of this type may appear within the next few years.

b. Surface Ships

Since 1962, a significant change in the major surface force has been taking place--an increased emphasis on missile air defense and de-emphasis on long-range, surface-to-surface missile capability.

The development of an ASW capability in the open-ocean surface forces had preoccupied Soviet naval strategists for some time. Stress on improving all aspects of ASW will undoubtedly continue. It appears doubtful that any new combatant designs of cruiser or destroyer types will emerge in the near term. Emphasis will be placed on increasing the combat capability of the open-ocean forces and there is a clear need for development of a new destroyer escort. Probably the most significant addition within the next few years will be the two helicopter carriers. These carriers, designed primarily to provide a seaborne platform for ASW helicopters, could presage the development of new ships designed to provide air support for many of the surface fleet's tasks.

It is apparent that the success of US aircraft carrier operations is keeping alive an internal Soviet polemic about the need for such ships in their navy. At present there is no evidence of the construction of additional helicopter carriers or the design of aircraft carriers but, following a period of evaluation of these two helicopter carriers, a new model probably will be built.

In out-of-area operations the Soviet surface forces seem to lack adequate logistic support and air support. Fulfillment of these deficiencies will depend largely on the construction priorities in naval shipbuilding.

The construction of the Kresta-class guided-missile light cruiser, the Kashin-class guided-missile frigate, and the Petya-class escort will most likely continue at current rates for a few more years to provide added combat capabilities. Logistic ships for surface ship support probably will be built, but it is doubtful that they will appear before the early 1970's.

c. Naval Air Forces

There probably will not be any major change in the SNAF bomber forces during the next few years, although the deployment of additional ASM-equipped aircraft is possible. The re-equipment of the ASW forces with more modern aircraft is expected to continue. The strength of these forces probably will be increased somewhat, and a gradual improvement in ASW capabilities can be expected.

Over the longer term the number of bombers is expected to decline, especially if no additional TU-22's are deployed. This decline could lead to the introduction of a new medium bomber in the mid-1970's.

There may be some further growth in the strength and capabilities of the ASW forces during the 1970's, but no major new programs are projected.

(1) Bombers

TU-95 deployment probably will end now that the two reconnaissance regiments equipped with this aircraft each have about 20 aircraft. This force is expected to continue in service through the 1970's.

Owing to the trend in SNAF deployment of the TU-22 it seems unlikely that additional TU-22 regiments will be formed. Because of the continued evidence of AS-4 development, however, projections of TU-22 deployment allow for the possible introduction of two new regiments.

The strength of the TU-16 ASM-equipped forces has been relatively stable for several years, and it is unlikely that there will be any substantial change in the next few years. The re-equipment of the Badger B force with the new AS-5 missile (in place of the obsolete AS-1 Kennel) extends the life of these aircraft, and they are expected to continue in service into the mid-1970's. The Badger C/AS-2 also is expected to remain in service, although the number probably will decline during the 1970's. There is some possibility that the Badger C may be

retrofitted with a new missile, just as the AS-5 has replaced the AS-1 on the Badger B. There is evidence that the AS-4 missile possibly is being tested for use on the TU-16, and the SNAF's Badger C aircraft could be modified to carry this high-performance ASM.

Even with efforts to extend the service life of the TU-16, the SNAF medium bomber forces will have declined considerably by the late 1970's. This will be particularly true if TU-22 strength is not increased beyond the present two regiments. Limited deployment of the TU-22 and continued reductions in TU-16 strength (the aircraft has been out of production since 1959) could lead the USSR to develop a new ASM-equipped medium bomber for service in the late 1970's and 1980's.

The IL-28 has been out of production since 1957, and there is no indication that a replacement is planned. The two remaining SNAF IL-28 bomber regiments probably will be deactivated sometime in the next few years, with the function of these aircraft being assumed by the medium bombers and other forces.

(2) Antisubmarine Aircraft

Replacement of the old BE-6 flying boat by the BE-12 amphibian and the May ASW aircraft is expected to continue, but it is considered unlikely that either aircraft will be deployed in large numbers. A mixed force of some 100 aircraft--perhaps half BE-12 and half May--might be in service during the 1970's.

It is believed that at least two regiments of KA-25's--50 to 60 aircraft--will be assigned to the two helicopter carriers now in existence. A third regiment might also be deployed, with the three units rotating between the carriers and a shore base. Another 15 to 20 KA-25's probably will be assigned to the Kresta-class guided-missile cruisers over the next two years.

During the early 1970's some additional helicopters of the KA-25 type probably will be deployed for service with ships such as the

Kresta-class cruisers. More helicopters of this kind also would be needed if new helicopter carriers are built, but there is no evidence that additonal carriers are currently under construction.

With the deployment of new fixed-wing ASW aircraft and carrier-based helicopters, some of the shore-based MI-4 units might be deactivated. A major reduction in these forces seems unlikely, however, and some KA-25's already have been delivered to one of these units. In addition to the KA-25's, the shore-based ASW units might also receive some large helicopters as the MI-4 is phased out during the 1970's. An amphibious version of the MI-8 Hip medium helicopter is known to be under development, and the deployment of an ASW variant of this aircraft would improve the capabilities of the SNAF ASW forces.

D. Coastal Defense Force

For more than a decade the USSR has had coastal defense missiles defending its major coastal installations. Deployment of the 35-nm-range SS-C-2b Samlet system commenced in the mid-1950's, and by the early 1960's about 35 battalions, with approximately 70 launchers, were deployed in all major fleet areas. Replacement by the 270-nm-range SS-C-1b Shaddock is believed to have begun in 1964 or 1965. Phase-out of the Samlet system may be complete by 1974. It is estimated that peak deployment of 11 to 15 Shaddock battalions--44 to 60 launchers--will be achieved by about 1970.

The effectiveness of the Soviet coastal defense missiles is high. The Samlet, if fitted with a high-explosive warhead and impact fuses, is expected to have a hit/near miss success rate of about 65 percent. In the unlikely event that a nuclear warhead and proximity fuses are fitted, the missile's success rate might exceed 85 percent.

The success rate for the Shaddock presumably would be about the same as for the similar SS-N-3 missile fired by E-II-class submarines. These rates are thought to be in excess of 55 percent if a nuclear warhead and proximity fuses areused, or about 45 percent if a high-explosive warhead and impact fuses are used.